



Safety-Kleen Corp.

US EPA RECORDS CENTER REGION 5



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RCRA Facility Investigation Phase I Release Assessment Report

Safety-Kleen Corp. Recycle Center
Dolton, Illinois
ILD980613913

March 2, 1995

B-120-CA-1



cc: Maywood
USEPA

J/KM

February 27, 1995

Mr. Douglas W. Clay, P.E.
Hazardous Waste Branch Manager
Illinois Environmental Protection Agency
Division of Land Pollution Control
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

RE: RCRA Facility Investigation Phase I Release Detection Assessment
Report, Safety-Kleen Corp. Recycle Center, Dolton, Illinois
(ILD980613913).

Dear Mr. Clay:

Transmitted with this letter are three copies of the document entitled "RCRA Facility Investigation Phase I Release Detection Assessment Report, Safety-Kleen Corp. Recycle Center, Dolton, Illinois (ILD980613913)." This report contains the results of the Phase I Investigation conducted to determine if solid waste management units (SWMUs) at the facility have released, are currently releasing, or have the potential to release hazardous waste and/or hazardous constituents to soil and/or air. The investigation was conducted in accordance with the Workplan (dated March 4, 1994) as amended by a letter from the Illinois Environmental Protection Agency dated August 30, 1994.

If you have any questions concerning this Report, please contact me at (708)468-2213.

Sincerely,
SAFETY-KLEEN CORP.

A handwritten signature in cursive script, appearing to read 'Gary Long'.

Gary Long
Manager- Remediation

Enclosure(s)

cc: John Valerius
TriHydro Corporation

gary-95-03

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PROJECT: 32-02

RFI PHASE I RELEASE
ASSESSMENT
SAFETY-KLEEN CORP. RECYCLE CENTER
DOLTON, ILLINOIS

March 2, 1995

Submitted by:

Safety-Kleen Corp.
1000 North Randall Road
Elgin, Illinois 60123

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TriHydro Corporation

920 Sheridan Street
Laramie, Wyoming 82070

(307) 745-7474
FAX: (307) 745-7729

Phase I of the RCRA Facility Investigation
Safety-Kleen Envirosystems Co.
Dolton, Illinois

Upon completion of Phase I of the RFI, this statement is to be completed by both a responsible officer of the owner or operator (as defined in 35 IAC 702.126) and by the registered professional engineer overseeing all work associated with the investigation. Submit one copy of the certification with original signatures and three additional copies.

gary:95-03

JUN-21-94 TUE 8:38

IEPA/LAND/PERMITS

FAX NO. 2175243291

P.15

Phase I of the RCRA Facility Investigation
Safety-Kleen
Dolton, Illinois
Log No. B-120-RFI-1

Upon completion of Phase I of the RFI, this statement is to be completed by both a responsible officer of the owner or operator (as defined in 35 IAC 702.125) and (2) a responsible officer (as defined in 35 IAC 702.126) of the laboratory which conducted the chemical analyses required as part of Phase I of the RFI. The original of this statement shall accompany the original certification statement for the overall Phase I activities and the RFI Phase I Report.

The sample collection, handling, preservation, preparation and analysis conducted as part of Phase I of the RFI at the facility described in this document has been conducted in accordance with the specifications in the approved workplan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

ILD980613913
USEPA ID Number

Dolton Recycle Center
Facility Name

Signature of Owner/Operator Date

Gary Long, Manager - Remediation
Name and Title of Owner/Operator
Representative

Safety-Kleen Corp
Name of Laboratory

James L. Breece 2/24/95
Signature of Laboratory Date
Responsible Officer

James L. Breece, Vice-President, Technical
Name and Title of Laboratory
Responsible Officer

Mailing Address of Laboratory:

P.O. Box 92050

Elk Grove Village, IL 60009

DWC:FM/mls/sp323W/16

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TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
1.0 INTRODUCTION	1-1
1.1 RFI Objectives	1-1
1.2 Facility Operations History	1-3
2.0 SOLID WASTE MANAGEMENT UNITS (SWMUs)	2-1
2.1 East Field	2-3
2.2 Truck Station No. 3	2-3
2.3 Truck Station No. 5	2-3
2.4 North Warehouse Pad (Former Truck Station No. 6)	2-4
2.5 Truck Station No. 9	2-4
2.6 Truck Station No. 10	2-4
2.7 Process Area in South Warehouse	2-5
2.8 West Tank Farm	2-5
2.9 Former Tank Farm D	2-6
2.10 Former Southeast Tank Farm	2-7
2.11 Barker Chemical No. 2 Area	2-7
3.0 PREVIOUS ASSESSMENT RESULTS	3-1
3.1 Previous Soil Data	3-1
3.1.1 Lithology	3-2
3.1.2 Soil Gas Survey	3-2
3.1.3 Geophysical Survey	3-7
3.1.4 Soil Quality Data	3-9
3.1.4.1 Previous Qualitative Soil Quality Results	3-9
3.1.4.2 Quantitative Soil Quality Results	3-9
3.2 Ground-Water Conditions	3-13
3.2.1 Regional Hydrogeology	3-14
3.2.2 Ground-Water Occurrence	3-14
3.2.3 Ground-Water Flow Directions	3-16
3.2.4 Ground-Water Quality	3-16
4.0 SOIL SAMPLING INVESTIGATIVE PROCEDURES	4-1
4.1 SWMU Soil Sampling Locations	4-1
4.1.1 East Field	4-2
4.1.2 Truck Station No. 5/North Warehouse Pad	4-2
4.1.3 West Tank Farm/Driveway to Facility	4-4
4.1.4 South Warehouse Process Area	4-4
4.1.5 Former Tank Farm D/Truck Station No. 3	4-5
4.1.6 Former Southeast Tank Farm	4-5
4.1.7 Truck Station 10	4-6
4.2 Soil Sampling Depths	4-6
4.3 Soil Sampling Procedures	4-6
4.3.1 Soil Sample Collection	4-6
4.3.2 Field Screening Procedures	4-7
4.3.3 Lithologic Logging	4-8

TABLE OF CONTENTS
(continued)

<u>Chapter</u>	<u>Page</u>
4.3.4 Laboratory Analysis	4-8
4.3.5 Decontamination Procedures	4-8
4.3.6 Borehole Abandonment	4-10
4.4 Barker Chemical No. 2 Area Investigation Procedures	4-10
4.4.1 Property Survey	4-10
4.4.2 Visual Reconnaissance Survey	4-10
4.4.3 Soil Gas Survey	4-12
4.4.4 Collection of Soil Samples	4-12
4.4.5 Drum Contents Sampling	4-14
5.0 GROUND-WATER SAMPLING INVESTIGATIVE PROCEDURE	5-1
5.1 Ground-Water Sampling Locations and Depths	5-1
5.2 Ground-Water Sampling Point Installation Procedures	5-1
5.3 Ground-Water Elevation Measurements	5-4
5.4 Ground-Water Sampling	5-4
5.5 Ground-Water Sample Handling and Analysis	5-4
5.6 Ground-Water Sampling Point Abandonment	5-5
6.0 SOIL INVESTIGATION RESULTS - DOLTON RECYCLE CENTER	6-1
6.1 Lithologic Conditions	6-1
6.2 Air Total Organic Vapor Concentrations	6-1
6.3 Soil Quality- Field Screening Results	6-2
6.4 Soil Quality-Laboratory Results	6-2
6.4.1 SWMU Releases	6-9
6.4.2 Vertical Extent of Soil Degradation	6-11
7.0 GROUND-WATER INVESTIGATION RESULT	7-1
7.1 Ground-Water Occurrence and Flow	7-1
7.2 Ground-Water Quality Data	7-1
8.0 BARKER CHEMICAL NO. 2 AREA RESULTS	8-1
8.1 Visual Site Investigation	8-1
8.2 Soil Gas Survey Results	8-5
8.3 Shallow Soil Quality Analytical Results	8-5
8.4 Drum Content Analytical Results	8-7
9.0 FUTURE ACTIVITIES	9-1
10.0 REFERENCES	10-1

LIST OF APPENDICES

Appendix

- A RELEVANT CORRESPONDENCES WITH THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA)**
- B QUALITY ASSURANCE PROJECT REPORT (QUAPR), RCRA FACILITY INVESTIGATION PHASE I RELEASE DETECTION ASSESSMENT, SAFETY-KLEEN RECYCLE CENTER, DOLTON, ILLINOIS**
 - B-1 QUALIFICATIONS OF PROJECT TEAM MEMBERS**
 - B-2 FIELD AUDIT RESULTS**
- C PHOTODOCUMENTATION OF FIELD ACTIVITIES, RCRA FACILITY INVESTIGATION PHASE I RELEASE DETECTION ASSESSMENT, SAFETY-KLEEN RECYCLE CENTER, DOLTON, ILLINOIS**
 - C-1 PHOTODOCUMENTATION OF FIELD ACTIVITIES SOUTH OF 138TH STREET**
 - C-2 PHOTODOCUMENTATION OF FIELD ACTIVITIES AT NO. 2 AREA BARKER CHEMICAL, NORTH OF 138TH STREET**
- D FIELD NOTES, RCRA FACILITY INVESTIGATION PHASE I RELEASE DETECTION ASSESSMENT, SAFETY-KLEEN RECYCLE CENTER, DOLTON, ILLINOIS**
- E BOREHOLE LOGS, RCRA FACILITY INVESTIGATION PHASE I RELEASE DETECTION ASSESSMENT, SAFETY-KLEEN RECYCLE CENTER, DOLTON, ILLINOIS**
- F SOIL QUALITY LABORATORY DATA REPORTS AND CHAIN-OF-CUSTODY/SAMPLE-ANALYSIS-REQUEST FORMS**
 - F-1 SOIL ANALYTICAL DATA REPORTS**
 - F-2 SOIL QA/QC DATA REPORTS**
 - F-3 CHAIN-OF-CUSTODY/SAMPLE-ANALYSIS REQUEST FORMS**
 - F-4 SOIL QUALITY DATA SUMMARY TABLES**

LIST OF APPENDICES
(continued)

Appendix

- G GROUND-WATER QUALITY LABORATORY DATA REPORTS AND CHAIN-OF-CUSTODY/SAMPLE-ANALYSIS-REQUEST FORMS**
 - G-1 GROUND-WATER ANALYTICAL DATA REPORTS**
 - G-2 GROUND-WATER QA/QC DATA REPORTS**
 - G-3 CHAIN-OF-CUSTODY/SAMPLE-ANALYSIS REQUEST FORMS**
 - G-4 GROUND-WATER QUALITY DATA SUMMARY TABLES**

LIST OF TABLES

<u>Table</u>		<u>Page</u>
3-1	Summary of Previous Soil Quality Data, Dolton Recycle Center, Dolton, Illinois	3-11
3-2	Summary of Previous Ground-Water Quality Data, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	3-18
4-1	Soils Constituent List, RFI Phase I Release Assessment, Dolton Recycle Center	4-9
5-1	Ground-Water Sampling Point Survey, Water Level, and Sampling Information, Phase I RCRA Facility Investigation, Safety-Kleen Recycle Center, Dolton, Illinois	5-3
5-2	Ground-Water Constituent List, RFI Phase I Release Assessment, Dolton Recycle Center	5-6
6-1	List of Abbreviations for Constituents, RFI Phase I Release Assessment, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	6-8

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1-1 Vicinity Map, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	1-2
1-2 Site Plan, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	1-4
2-1 Solid Waste Management Units, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	2-2
2-2 Location Map, Barker Chemical No. 2 Area (April 1980 Aerial Photo) . . .	2-8
2-3 Barker Chemical No. 2 Area (1987 Aerial Photo)	2-9
3-1 Previous Borehole Locations, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	3-3
3-2 Cross Section A-A', Safety-Kleen Corp. Recycle Center, Dolton, Illinois .	3-4
3-3 Cross Section B-B', Safety-Kleen Corp. Recycle Center, Dolton, Illinois .	3-5
3-4 Previous Soil Gas Survey, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	3-6
3-5 Previous Conductivity Survey (Vertical Orientation), Safety-Kleen Corp. Recycle Center, Dolton, Illinois	3-8
3-6 Previous Soil Quality Data Summary, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	3-10
3-7 Previous Monitoring Well Locations, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	3-15
3-8 Potentiometric Surface, Perched Zone, Safety-Kleen Corp. Recycle Center, Dolton, Illinois (November 1988)	3-17
3-9 Previous Ground-Water Quality Data, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	3-20
4-1 Sampling Locations, RFI Phase I Release Assessment, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	4-3
4-2 Location Map, Barker Chemical No. 2 Area (April 1980 Aerial Photo) . .	4-11
4-3 Sampling Locations, Barker Chemical #2 Area, North of 138th Street, Dolton, Illinois (September 1994)	4-13

LIST OF FIGURES
(continued)

<u>Figure</u>		<u>Page</u>
5-1	Ground-Water Sampling Locations, RFI Phase I Release Assessment, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	5-2
6-1	Field Screening Total Organic Vapor (TOV) Concentrations, RFI Phase I Release Assessment, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	6-3
6-2	Soil Quality Data, East Field, RFI Phase I Release Assessment, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	6-4
6-3	Soil Quality Data, Truck Station No. 10/Former Tank Farm D/Former Southeast Tank Farm, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	6-5
6-4	Soil Quality Data, West Tank Farm RFI Phase I Release Assessment, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	6-6
6-5	Soil Quality Data, Truck Station No. 5/North Warehouse Pad, RFI Phase I Release Assessment, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	6-7
7-1	Potentiometric Surface Shallow Perched Zone, RFI Release Assessment, Safety-Kleen Corp. Recycle Center, Dolton, Illinois (9/94)	7-2
7-2	Ground-Water Quality Data, Phase I RFI Release Assessment, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	7-3
8-1	Location Map, Barker Chemical No. 2 Area (April 1980 Aerial Photo) . . .	8-2
8-2	Barker Chemical No. 2 Area (1987 Aerial Photo)	8-3
8-3	Physical Description and Soil Gas Survey Results, Barker Chemical #2 Area, North of 138th Street, Dolton, Illinois (September 17, 1994)	8-4
8-4	Sampling Locations and Analytical Results, Barker Chemical #2 Area, North of 138th Street, Dolton, Illinois (September 1994)	8-6

CHAPTER 1.0

INTRODUCTION

Safety-Kleen Corp. (S-K) owns and operates a recycling facility (SIC 2851) in Dolton, Illinois, that accepts organic chemicals and solvent wastes from S-K service centers and other S-K recycle centers, and from industrial and commercial facilities. Spent materials brought to the facility are regenerated into product or blended for use as a fuel in cement kilns. The location of the facility is shown on Figure 1-1. Principal wastes managed at the facility are paint waste, lacquer thinner, mineral spirits, and waste oil.

S-K conducted a Phase I RCRA Facility Investigation (RFI) at the Dolton Recycle Center in September 1994. The RFI was conducted in accordance with the "RCRA Facility Investigation Phase I Release Assessment Workplan" dated March 4, 1994. The Illinois Environmental Protection Agency approved the RFI Workplan with conditions in a letter dated August 30, 1994. The letter and other relevant Agency correspondences are included in Appendix A.

1.1 RFI Objectives

The Dolton Recycle Center is permitted to store and treat RCRA hazardous wastes (ILD980613913). As a condition of the RCRA permit, the Illinois Environmental Protection Agency (IEPA) required S-K to conduct a RCRA Facility Investigation (RFI). In accordance with the RCRA permit, the RFI is divided into three phases:

Phase I - Release Assessment - Phase I is designed to provide information on the characteristics and integrity of each SWMU/AOC and to determine if a SWMU/AOC has released, is currently releasing, or has the potential to release hazardous waste and/or hazardous constituents to the soil or air.

Phase II - Extent of Release Assessment - Phase II is designed to define the extent of releases (if any) to soil from the subject SWMUs/AOC.

Phase III - Ground-Water Release Assessment - Phase III is designed to define the extent of releases to ground water (if any) from the SWMUs/AOC releases identified in Phase I or II.

The September 1994 investigation at the Dolton Recycle Facility primarily addressed the Phase I objectives. During the September 1994 investigation, S-K voluntarily collected additional soil and ground-water quality data which are pertinent to determining the characteristics and degree of degradation. These data are also presented in this report.

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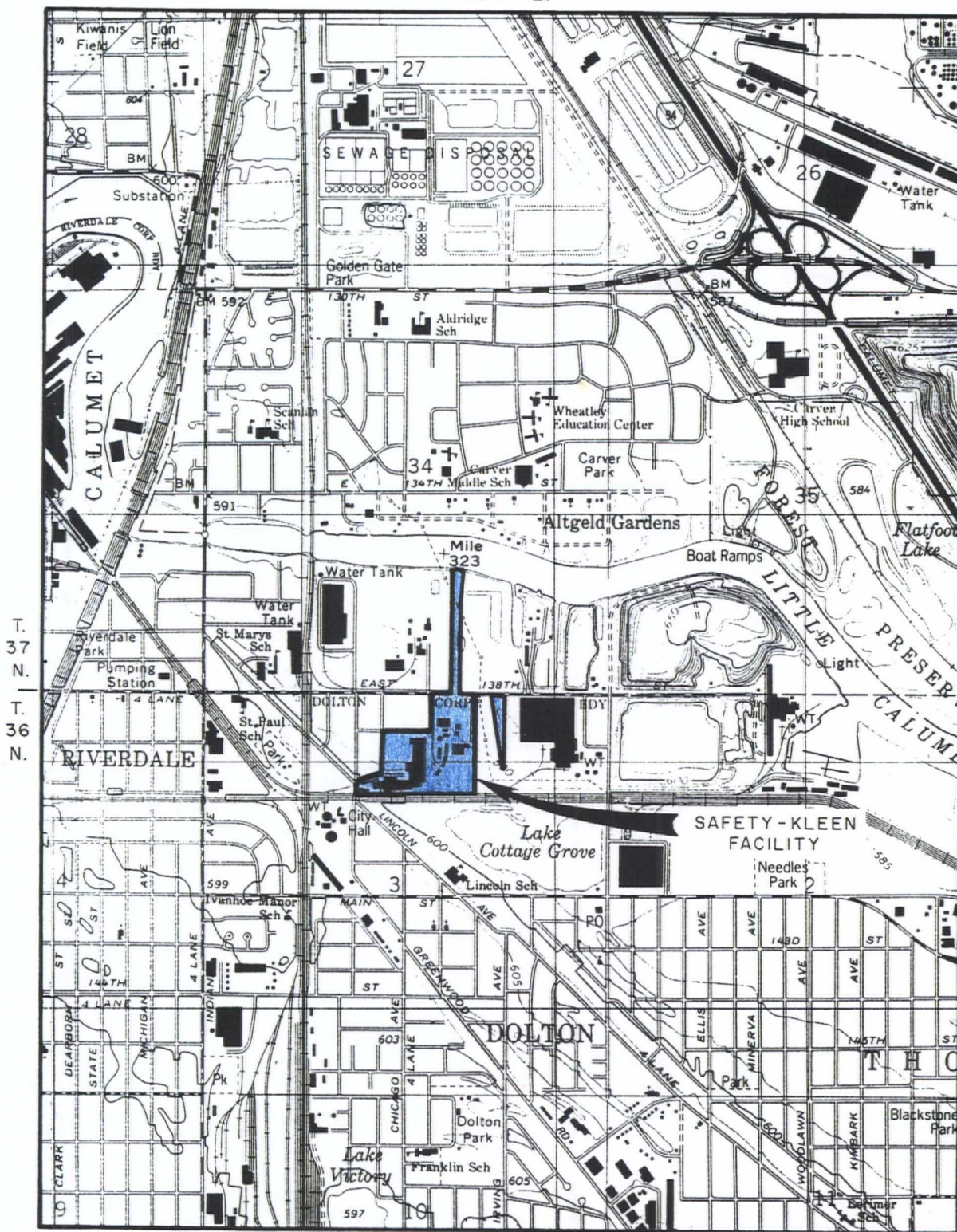


FIGURE 1-1 VICINITY MAP, SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS (ILD980613913)

The results of the RFI were generally consistent with previous soil and ground-water quality data from the site. The RFI and historical data combined provide a detailed characterization of environmental conditions at the site. Given the large amount of existing information, subsequent investigations will likely be limited in scope and will be targeted to accomplish any specific remaining RFI objectives.

1.2 Facility Operations History

The Dolton Recycle Center occupies a 30-acre site, (at 633 East 138th Street, Dolton, IL) in an industrial area about 20 miles south of downtown Chicago. The site has been used for chemical process operations for more than 40 years. A site plan of the facility is presented on Figure 1-2.

Prior to S-K ownership, three types of activities occurred on the site:

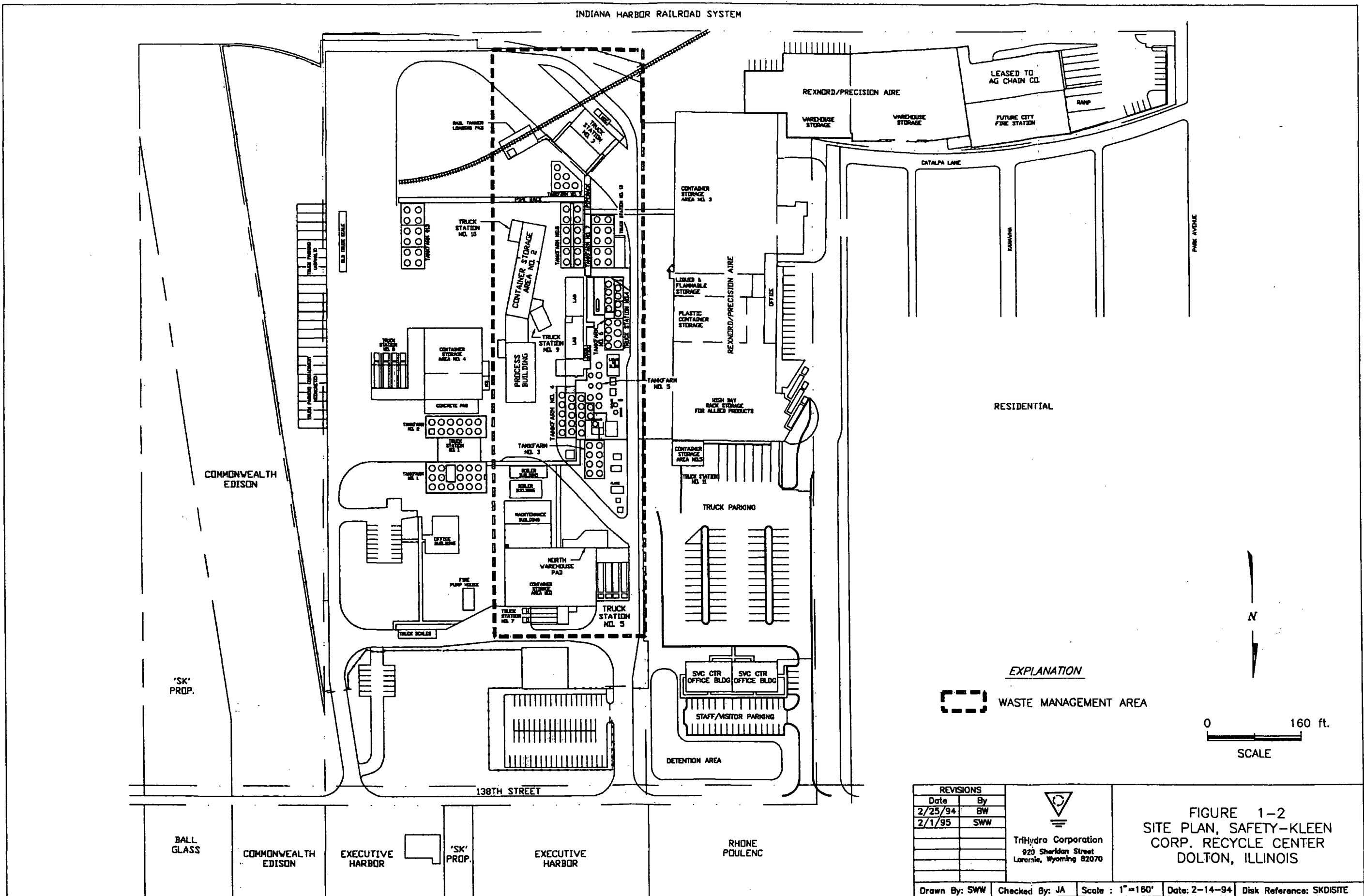
- Barker Chemical/McKesson EnviroSystems. The site occupied by the current storage and processing operations was used since 1951 principally to reclaim paint solvent and lacquer thinner wastes.
- Rexnord/Precision Aire. Most of the western warehouse (currently the S-K distribution center) was leased for manufacture of metal components.
- TriStamp/Agri-Chain. The southwestern corner was and continues to be leased for a punch press operation.

A description of these previous operations was obtained from the RCRA Facility Assessment (RFA) prepared by IEPA in 1991. As shown in site records, the site was farmland in 1949. According to the RFA, the facility has been in continuous operation since 1951.

In 1951, Barker Chemical Company constructed a plant to manufacture coatings for wood and metal, plant adhesives, surface primers, putty, and thinners for different types of coatings. The operations also included the recycling of an estimated 150,000 gallons per month of spent solvents, which were mainly paint solvents and lacquer thinner from the paint industry.

Ownership of the site passed to Foremost-McKesson, Inc. in April 1981, and the facility became known as McKesson EnviroSystems. There is no indication in the RFA that operations changed with the change of ownership. McKesson operated the facility until purchase by S-K in March 1987.

S-K has owned and operated the facility since March 1987. All waste receipt, storage, and processing occurs in the western half of the recycle center as shown on Figure 1-2. The eastern half of the facility is used for product storage and shipping.



The warehouse to the west of the waste management area is a distribution center used to store dry commercial products for shipment to S-K service centers.

CHAPTER 2.0

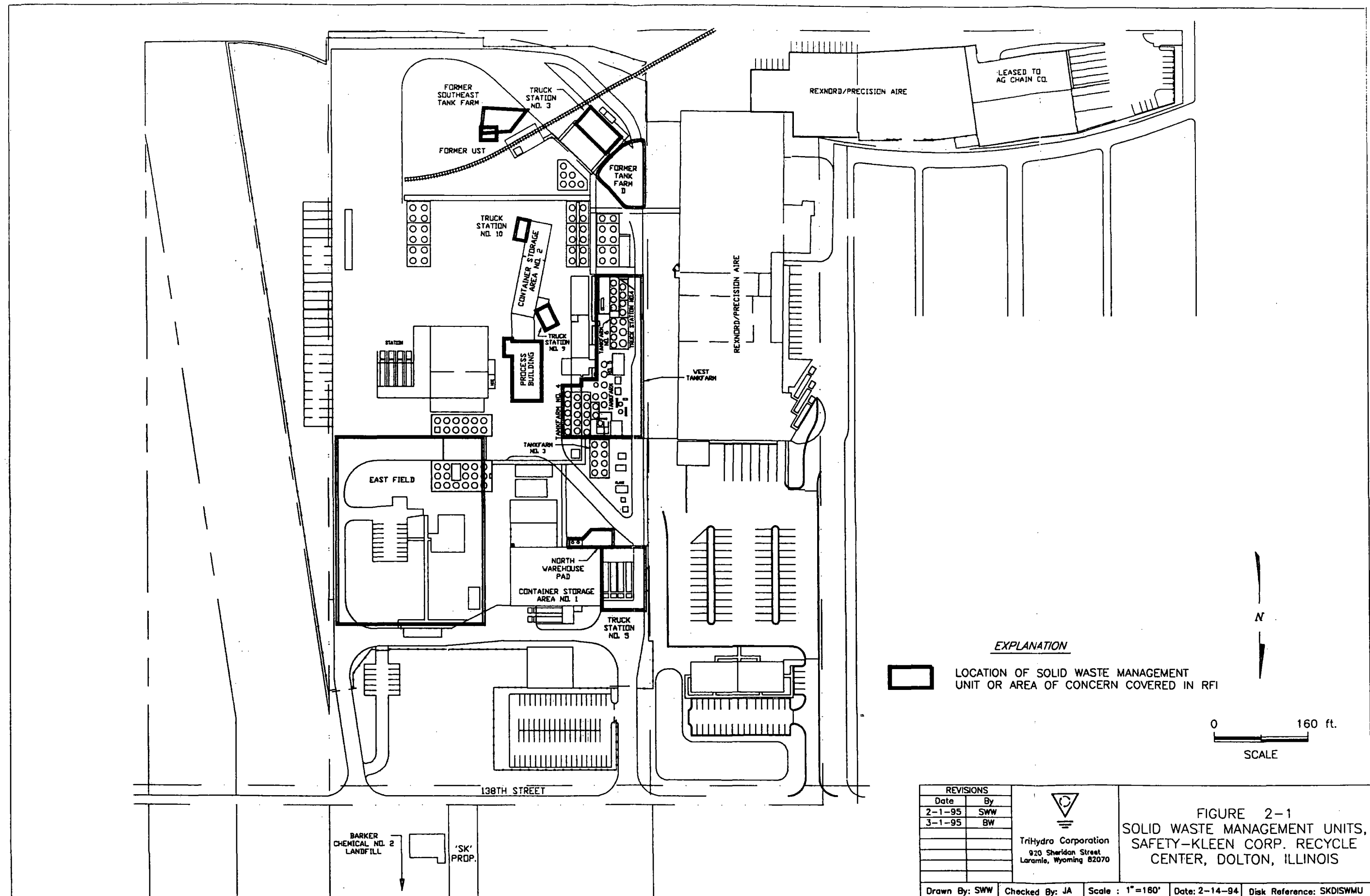
SOLID WASTE MANAGEMENT UNITS (SWMUs)

This chapter presents a detailed description of the individual solid waste management units (SWMUs). The locations of the SWMUs and areas of concern (AOCs) covered by the RFI are shown on Figure 2-1. The SWMUs targeted in this investigation included units operated by S-K, units operated by prior site owners, and areas of concern in which suspected units may have been operated by prior owners. SWMUs and AOCs addressed in this Report are:

- East Field
- Truck Station No. 3
- Truck Station No. 5
- North Warehouse Pad (Former Truck Station No. 6)
- Truck Station No. 9
- Truck Station No. 10
- Process Area in the South Warehouse (including Drum Emptying Unit Vat 1, Automated Drum Handling Unit Vat 2, Ballmill and Ballmill Sump)
- West Tank Farm [including Driveway to the Facility, Tank Farm No. 4, Tank Farm No. 5 (in-process storage tanks, Solvent Dryers #1 through #4, Pot Stills #1 and #2, Distillation Column, Thin Film Evaporator and Vapor Recovery Systems), Tank Farm No. 6, and Truck Station No. 4]
- Former Tank Farm D
- Former Southeast Tank Farm
- Barker Chemical No. 2 Area

Each of the SWMUs addressed in the Phase I Release Assessment Investigation is described in the remaining sections of this chapter.

Two SWMUs, indicated as numbers 7b and 7c in the IEPA letter dated August 30, 1994, were not included in this Phase I RFI. These areas are the former Rexnord/Precision Aire property and the Agri-chain property, respectively. In accordance with an IEPA letter dated March 9, 1994 (included in Appendix A), the investigations of these areas have been deferred pending a study by S-K of previous waste management activities at these sites. S-K has agreed to present the results of such a study to IEPA prior to December 31, 1997.



2.1 East Field

The area is located in the northeastern corner of the facility, as shown on Figure 2-1. Barker Chemical Company used the area to dispose of empty drums. As reported in the RFA (Illinois Environmental Protection Agency, 1991), approximately 400 drums and soil were excavated from the area in December 1979 and January 1980. It is believed that McKesson required Barker to perform this remediation prior to purchase of the property. An additional 12 drums were uncovered and disposed of in 1991 while digging a trench for a sewer line in an open area east of Container Storage Area No. 1.

2.2 Truck Station No. 3

The truck station was constructed by S-K in 1990 in the southwestern corner of the facility (Figure 2-1). Prior to that time, the area was open, undisturbed ground. S-K uses the truck station to receive bulk wastes (principally mineral spirits), and to ship out bulk reclaimed mineral spirits and fuels.

The station is a covered, reinforced concrete structure equipped with secondary containment to contain spills. A spill of approximately 250 gallons of waste oil occurred at the station in 1991. The spill was entirely contained on concrete and immediately cleaned up.

2.3 Truck Station No. 5

The truck station is located in the northwestern corner of the facility northwest of Container Storage Area #1 (Figure 2-1). It has been in use since at least 1987. S-K uses the truck station for the unloading of all containerized wastes from truck trailers, and the loading of containerized wastes that are to be treated at other facilities.

The area was gravel until 1989. Currently, the station consists of a covered, reinforced concrete structure 55 feet wide by 90 feet long, including the dock area, with capacity for four truck trailers. There is a concrete-lined trench on the south side to collect stormwater and prevent it from entering the truck station. The pad is sloped toward the dock area to contain and collect potential spills.

2.4 North Warehouse Pad (Former Truck Station No. 6)

The north warehouse pad is located in the northwestern corner of the facility south of Container Storage Area #1 (Figure 2-1). It has been in use since at least 1987. The station is a partially covered, sloped, reinforced concrete structure 28 feet wide by 53 feet long with capacity for a single transfer truck.

S-K used the truck station for the internal transfer of containerized waste from Container Storage Area No. 1 to Container Storage Area No. 2. The use was converted to a staging area for unloading liquid containerized wastes into two 3,000-gallon day tanks, where samples are collected for laboratory analysis before they are pumped to Tank Farm No.4 or No. 6. The two 3,000-gallon day tanks are located on a reinforced concrete pad within an 18-inch high concrete dike wall. A 2-inch curb is located around the perimeter of the concrete pad, and the floor slopes toward a sump located in the east corner of the truck station.

2.5 Truck Station No. 9

The truck station is located on the west side of container Storage Area No. 2 (Figure 2-1). It has been in use since at least 1987. S-K uses the truck station for the internal transfer of containerized wastes to and from the container storage area.

The station is a sloped, reinforced concrete pad 23 feet wide by 50 feet long with the capacity for two truck trailers. The station is equipped with curbs to collect and contain potential spills. A stormwater catch basin is located immediately northwest of the truck station to collect stormwater and prevent it from entering the truck station.

2.6 Truck Station No. 10

The truck station is located on the east side of Container Storage Area No. 2 (Figure 2-1). It was constructed and has been in use since 1991 for the internal transfer of containerized wastes to and from the container storage area. The area was used for a loading dock previously.

The station is a sloped, reinforced concrete pad 36 feet wide by 20 feet long with the capacity for four truck trailers. The station is equipped with sloped concrete side walls/curbs to contain potential spills.

2.7 Process Area in South Warehouse

The process area occupies the northern third of the South Warehouse (Figure 2-1). This indoor area has been used since at least 1983 to liquify containerized semi-solid wastes prior to fuel blending in the West Tank Farm. The units contained in the process area include:

- Drum Emptying Unit Vat #1. A 600-gallon carbon steel mixing bin used for manually dumping pourable wastes entering the fuels program. Liquids with grindable solids are transferred to the ballmill, and the resulting liquids are pumped to Tank Farm #6. Nongrindable solids are containerized, and shipped offsite from Truck Station No. 9 or No. 10 for incineration.
- Automated Drum Handling Unit Vat #2. A 1,600-gallon carbon and stainless steel mixing bin used for automatically dumping pourable wastes. Wastes are processed for the fuels program in the same manner as at Vat #1. Nongrindable solids are containerized, and shipped offsite from Truck Station No. 9 or No. 10 for incineration.
- Ballmill. High solids content wastes are recirculated through a ball grinder barrel constructed of stainless and carbon steel. Grindable solids are transferred to Tank Farm No. 6 (fuels program).
- Ballmill Sump. A 40-gallon stainless steel-lined sump with metal grating to collect spills in the ballmill.

The process area is sloped away from doors to contain spills, and the floor and lower walls are covered with epoxy to minimize the potential for a release.

As requested by IEPA, an inspection of the process building was conducted by an independent registered professional engineer to assess the integrity of the concrete floor and secondary containment structures to prevent releases to underlying soils. The engineer determined that the floor and secondary containment structures were intact, and that no corrective actions were necessary. S-K maintains a policy of inspecting and sealing cracks or repairing deteriorated areas of the epoxy/polymer-coated floor, berms, and lower walls on a routine basis.

2.8 West Tank Farm

The West Tank Farm (Figure 2-1) includes waste transportation, transfer, process, and storage facilities in the west-central part of the facility. The tank farm has been in place at least since 1961, based on site records. The West Tank Farm contains the following units:

- Driveway to the Facility. A concrete road that runs along the western edge of the facility. The driveway is used to truck bulk wastes to Truck Station No. 3, and to transfer bulk fuels at Truck Station No. 4.
- Truck Station No. 4. An uncovered, sloped, reinforced concrete pad 12 feet wide by 103 feet long with capacity for a single tanker trailer. The truck station is used for transfer of bulk fuels to Tank Farm No. 6.
- Tank Farm No. 4. Fifteen aboveground 15,000-gallon carbon steel tanks permitted for the storage of hazardous waste. The tanks contain wastes to be blended into the fuels program in Tank Farm No. 6. The tank farm floor is reinforced concrete with perimeter and internal reinforced concrete coated dikes to control spillage, leakage, and stormwater. Both floors and dikes are coated with epoxy. There are two secondary containment systems with capacities in excess of 100% of the volume of the largest tank.
- Tank Farm No. 5. A process area which contains seven carbon steel and two stainless steel tanks, and several process units to reclaim mineral spirits, paint wastes, and lacquer thinner. Two former RCRA tanks (55 and 56) were clean closed, and all tanks are now used for storage of in-process (distilled) products. The floor and dikes are constructed in the same way as those in Tank Farm No. 4. The secondary containment system has a capacity more than twice the volume of the largest tank (15,000 gallons).
- Process Units. Tank Farm No. 5 contains process units, including a thin film evaporator to reclaim solvents, solvent dryers #1 through #4, a distillation column, and pot stills #1 and #2 to adjust the color of the reclaimed products. All process units are located within the Tank Farm No. 5 secondary containment system.
- Tank Farm No. 6 (Former J Tank Farm). Fifteen above-ground carbon steel tanks permitted for the storage of hazardous wastes. Twelve tanks have a capacity of 15,000 gallons, two are 20,000 gallon tanks and one is a 17,500 gallon tank. The tanks are used to blend various streams into fuels. The tank farm floor is epoxy-coated reinforced concrete with perimeter and internal epoxy-coated dikes to control spillage, leakage, and stormwater. There are two secondary containment systems with capacities in excess of 100% of the volume of the largest tank.

2.9 Former Tank Farm D

This former tank farm was located in the southwestern corner of the facility (Figure 2-1). It was in operation until 1987 for the storage of reclaimed product. S-K decommissioned the tank farm shortly after purchase of the facility. The site is

currently a vacant area and roadway to Truck Station No. 3. The former tank farm had an earthen floor and earthen dike secondary containment.

2.10 Former Southeast Tank Farm

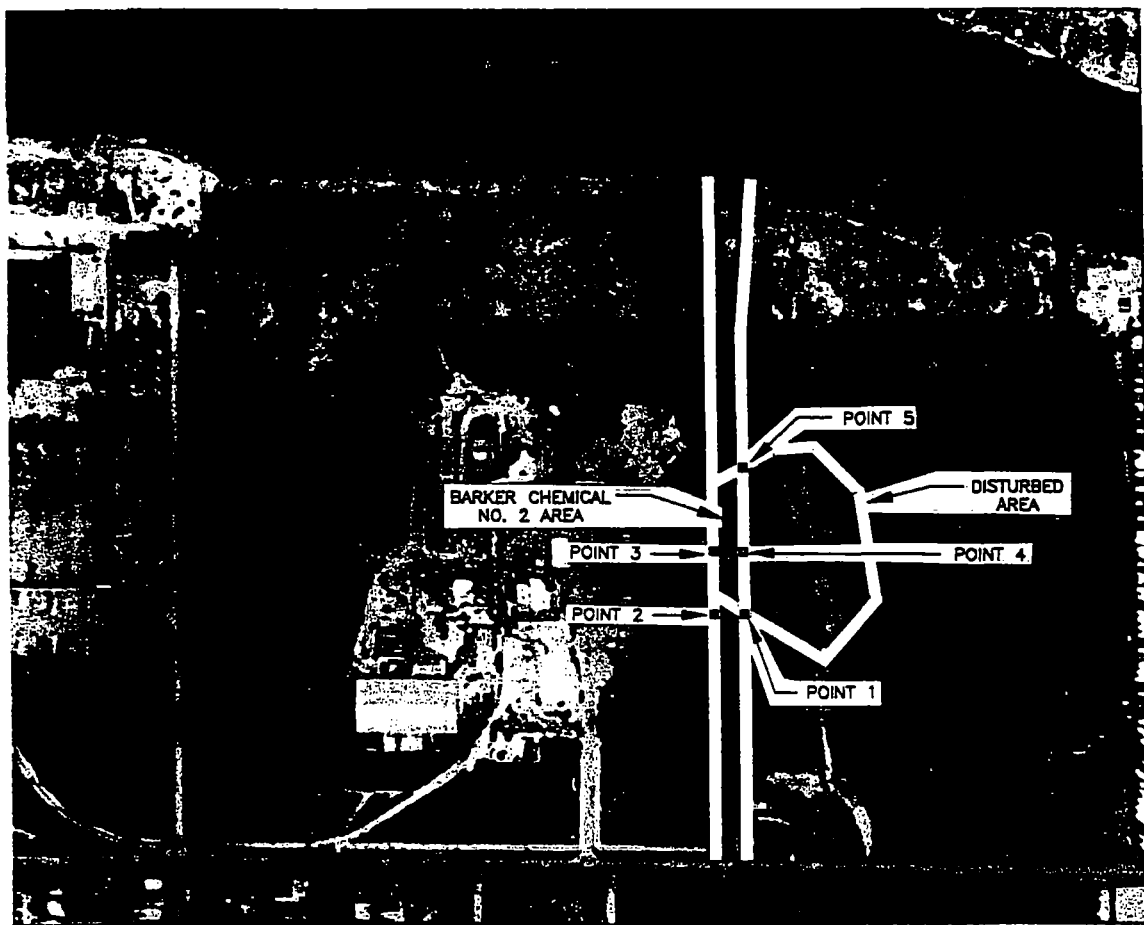
While reviewing plant records during preparation of the RFI Workplan, S-K discovered a former above-ground tank farm in the southeastern part of the plant (Figure 2-1). S-K voluntarily added this tank farm as an area of concern to be addressed during Phase I.

Barker Chemical Company installed the tank farm prior to 1961. It contained 15 above-ground storage tanks. The above-ground tank farm was used until 1984, when McKesson replaced it with 22 underground storage tanks (USTs) in the same area. McKesson used the above-ground tanks and USTs for the storage of product. S-K removed the USTs in 1987 shortly after acquiring the facility. One underground structure (possible former UST area) remains in place (Figure 2-1). The location and dimensions of the former UST area were confirmed during a field survey on February 16, 1994.

2.11 Barker Chemical No. 2 Area

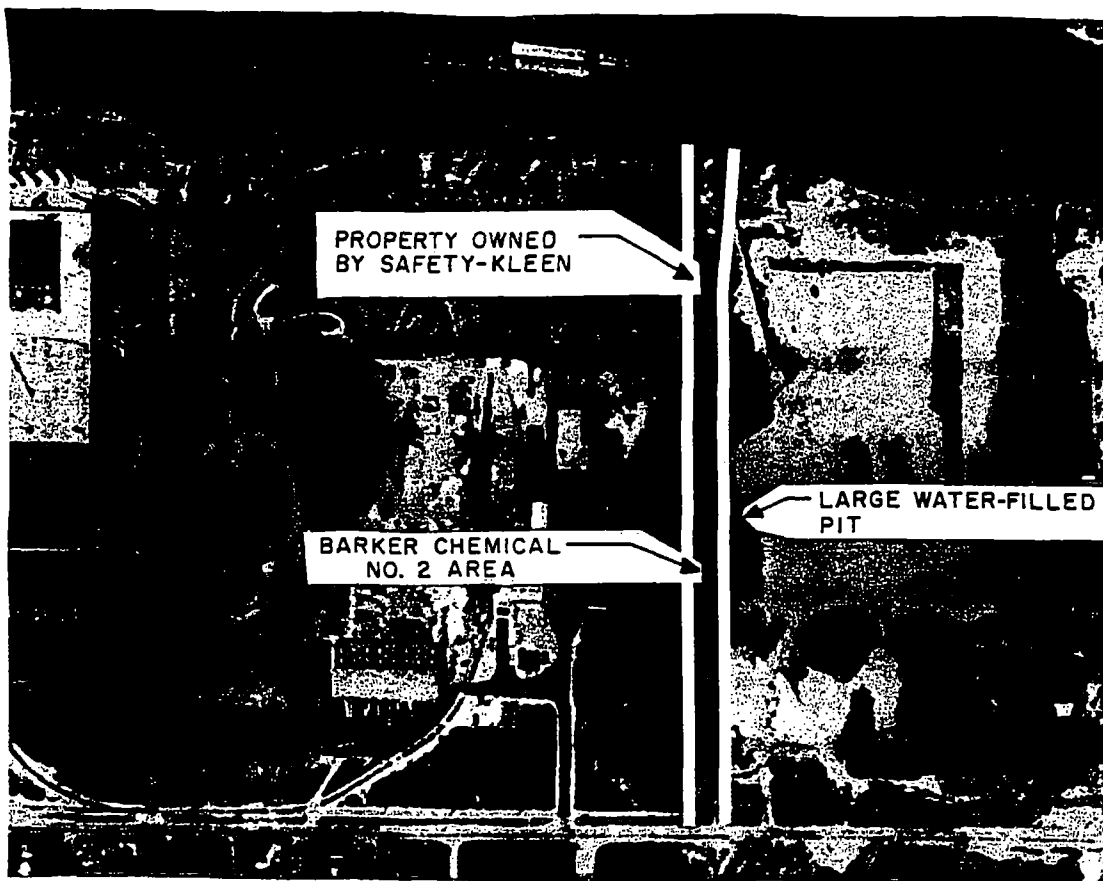
S-K owns a parcel of property on the north side of 138th St., across the street from the Dolton Recycle Center. This property, consists of a strip of land running from 138th St. to the Little Calumet River, a distance of approximately 1700 feet. The width of the property is 50 feet for most of its length. Beginning about 400 feet south of the river, the property widens slightly toward the river. This land was purchased by S-K along with the Dolton facility in 1987. The area of concern, referred to as the "Barker Chemical No. 2 Area" consists of a section of the S-K property which appeared to have been disturbed in a 1980 aerial photograph (Figure 2-2).

In the approval letter dated August 30, 1994 (Appendix A), the Illinois Environmental Protection Agency (IEPA) required that the Barker Chemical No. 2 site be included in the Phase I RFI to determine whether a SWMU existed at the site, and if so, whether a release occurred from the SWMU to soils. The area is currently overgrown with brush (Figure 2-3). However, Figure 2-2 shows a disturbed area in 1980 which extends on to the S-K property. The "disturbed area" was targeted for the environmental investigation because it was considered a possible site of waste disposal activities.



1980

FIGURE 2-2 :LOCATION MAP, BARKER CHEMICAL NO. 2
AREA (April 1980 Aerial Photo)



1987

FIGURE 2-3 :BARKER CHEMICAL NO. 2 AREA (1987 Aerial Photo)

CHAPTER 3.0

PREVIOUS ASSESSMENT RESULTS

Prior to this RFI, six soil investigations and two ground-water investigations had been conducted at the facility since 1979. A considerable amount of qualitative information and quantitative data had been collected on soil lithology, soil quality, ground-water occurrence, ground-water flow direction, and ground-water quality in the vicinity of the solid waste management units (SWMUs) designated in the Part B Permit.

The data collected at the site prior to the RFI were referenced and described in detail in the RFI Workplan (TriHydro Corporation, 1994). This chapter summarizes those previous data which are relevant to achieving the Phase I objectives or which can be used as a basis of comparison to evaluate the comparability and representativeness of the data collected during the Phase I RFI. Comparisons of the investigation data with the previous data are presented in chapters 6 and 7.

3.1 Previous Soil Data

During the six soil investigations at the site since 1979, qualitative and quantitative information was generated in the vicinity of the solid waste management units designed in the Part B Permit. Prior to this RFI, the following soils information has been collected on the site:

- Physical descriptions of the soils at 63 locations.
- Qualitative descriptions of soil quality at the same 63 locations, and quantitative data on soil quality at 21 locations.
- A soil gas survey at 27 locations to indicate the presence of volatile organic compounds (VOCs).
- An electromagnetic conductivity survey at 110 locations to indicate the possible presence of buried objects and/or elevated salinity.

These data collected during the six previous investigations have led to the identification of three impacted areas at the facility as well as site-specific conditions which limit the potential migration of soil and ground-water impacts. These data are summarized below.

3.1.1 Lithology

A detailed description of the subsurface lithology was presented in the RFI Workplan. The large number of previous soil borings and their distribution throughout the site have resulted in an excellent definition of subsurface lithology. The locations of the previous boreholes are presented on Figure 3-1. The sediment in the area consists of low permeability lake silts and clays, with a few interbedded sand lenses. The sediments become more granular to the north. However, at least 30 feet of low permeability silts and clays were documented in all borehole logs at the site.

Lithologic cross sections across the site are shown on Figures 3-2 and 3-3. The lithology is consistent across the site. At the surface is a layer of topsoil (silty clay loam) or fill which is 1 to 4 feet thick. The fill consists of clay, silt, sand, gravel and rubble. The area backfilled with clay, which is shown on Figure 3-2, corresponds geographically with the area where the drums were excavated.

Under the topsoil or fill are some discontinuous lenses of clay and medium to coarse-grained sand interbedded in the silt and fine sand matrix. The thickness of the silts and fine sands varies from up to 15 feet in the southeastern corner of the site to absent in the northeastern part of the site.

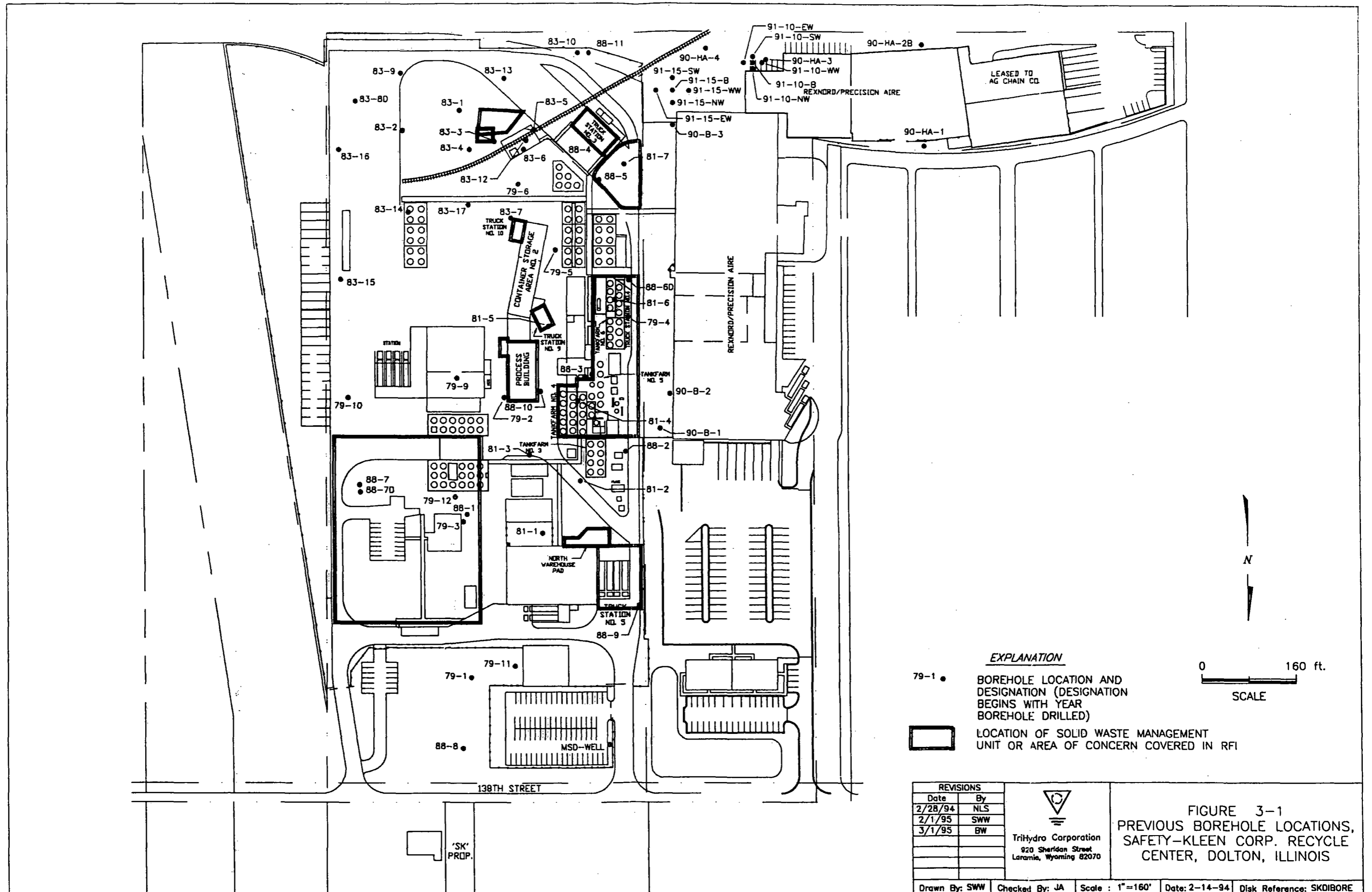
Under the silts and fine sands are low permeability, gray to brown silty clays and clayey silts which constitute the predominant shallow lithology beneath the site. The clays are 35 to 40 feet thick across the entire site, and extend to bedrock. The composition of the clays changes from stiff at shallow depths to very stiff and hard near bedrock.

Based on four boreholes drilled in 1988 at the corners of the property, bedrock occurs at approximately 45 feet below ground surface. The uppermost bedrock is a hard, gray dolomite (the Niagaran Dolomite) which is moderately fractured in the upper several feet, but less fractured with depth. No open voids were encountered in the bedrock during drilling.

3.1.2 Soil Gas Survey

A soil gas survey was conducted at 27 locations across the plant site in 1988 to identify areas where VOCs may have been present in shallow soils. The results are shown on Figure 3-4. Three areas of elevated TOV concentrations were identified by the soil gas survey:

- East Field, south of the office building, where 12 drums were uncovered during installation of a sewer line in 1991. The maximum TOV concentration was 90 units.
- West Tank Farm/Truck Station No. 9, located in the west-central part of the facility. The maximum TOV concentration was 240 units.



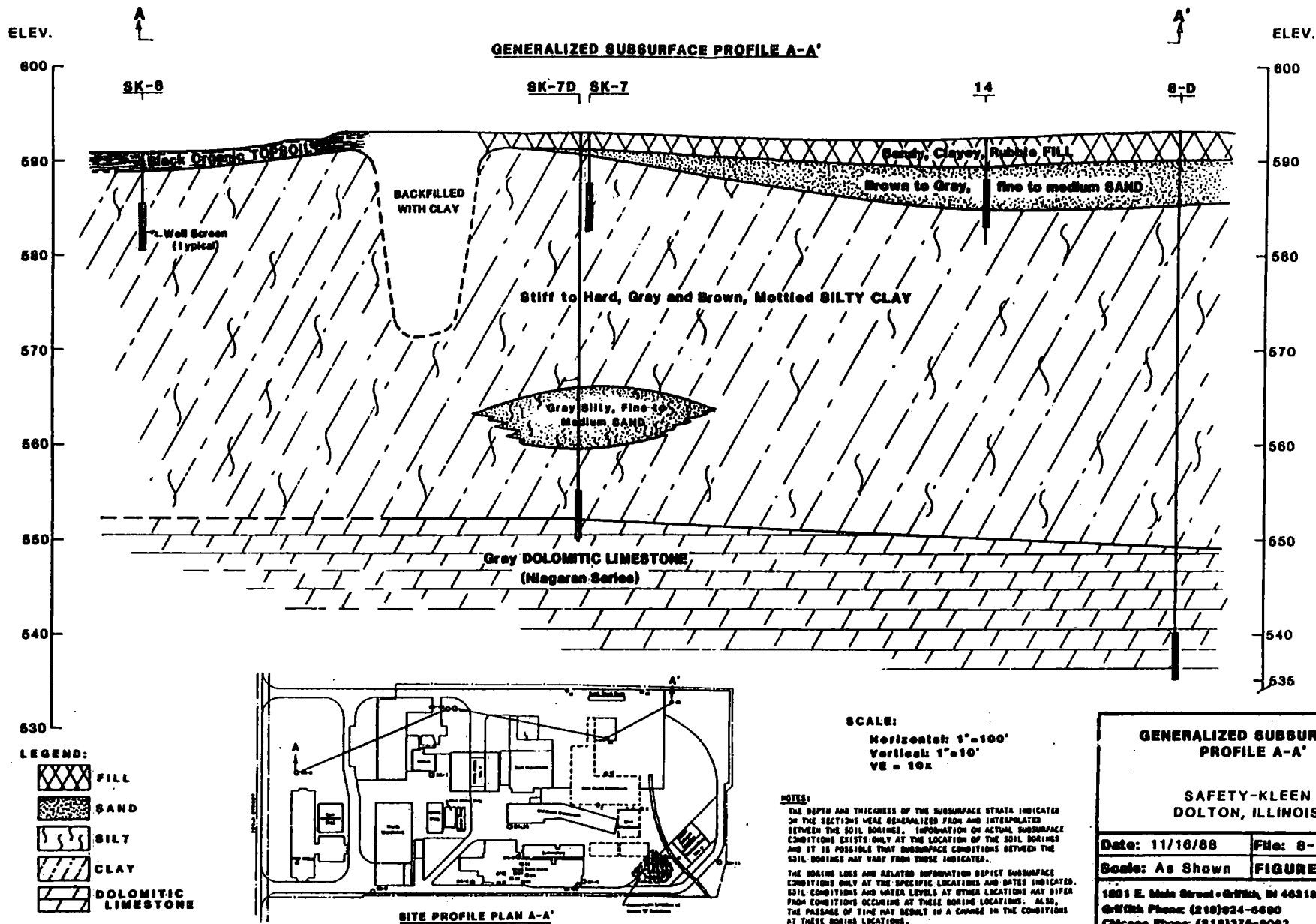


FIGURE 3-2 :CROSS SECTION A-A', SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS

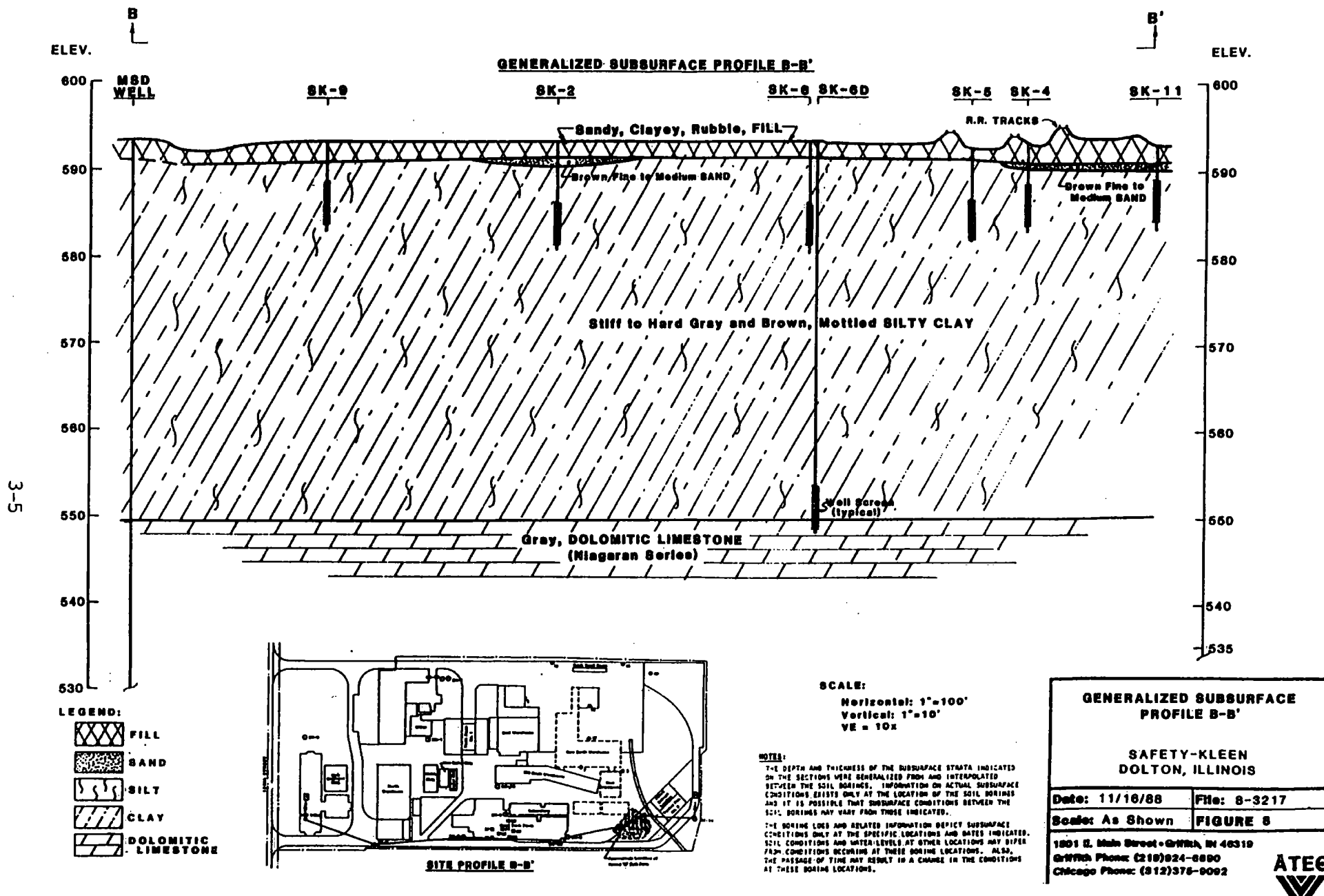


FIGURE 3-3 :CROSS SECTION B-B', SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS

3-6

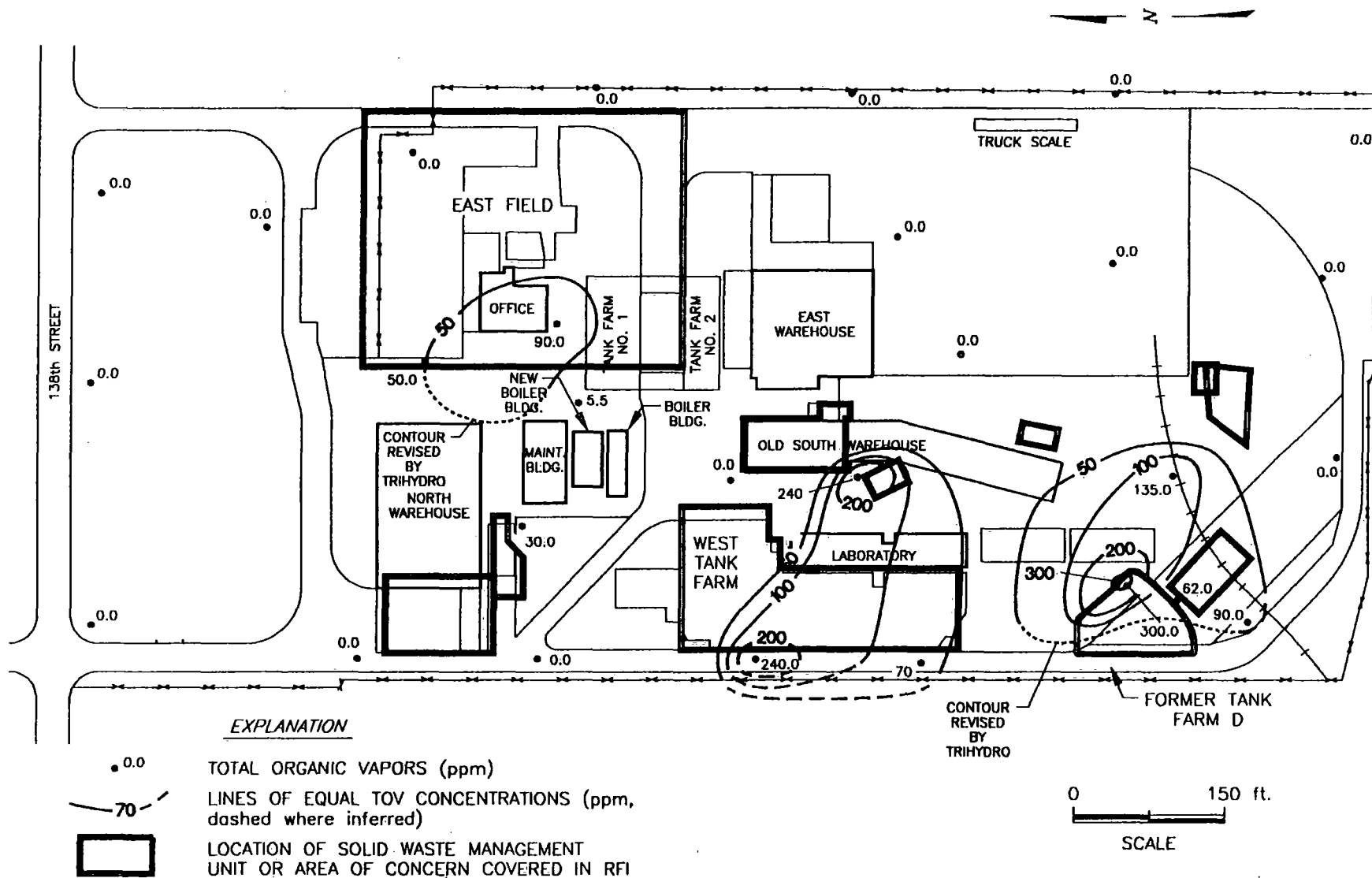


FIGURE 3-4 :PREVIOUS SOIL GAS SURVEY, SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS
(from ATEC, 1988)

SKSOGASU

- At and east of Former Tank Farm D. The maximum TOV concentration was 300 units.

During the RFI, shallow soil impacts due to the presence of VOCs were confirmed by the laboratory data in each of these three areas (Chapter 6). Shallow soil impacts were not detected during the RFI in areas where the previous soil gas survey indicated the absence of elevated TOV.

3.1.3 Geophysical Survey

An electromagnetic conductivity survey was conducted in 1988 at 110 locations on the plant site to identify possible areas of higher salinity or possibly buried ferrous objects. Surveys were performed with a 3.7 meter coil spacing using both a horizontal and vertical orientation.

The results of the survey are plotted on Figure 3-5. The geophysical survey results correlate with the soil gas survey results. The geophysical survey identified the following areas of possible salinity and/or buried ferrous objects:

- East Field, south and west of the office building. The maximum conductivity reading [160 millimhos per meter (mm/m)] was measured to the southwest of the office building in 1988. This area was excavated in 1991 and 12 drums (the likely source of the elevated conductivity) removed. It is important to note that no other elevated readings were measured in the East Field, indicating no other areas of buried ferrous objects (drums) in the East Field.
- West Tank Farm/Truck Station No. 9, located in the west-central part of the plant. The maximum conductivity readings (150-160 mm/m) were measured along a storm sewer that runs west of the West Tank Farm and a sanitary sewer that exits the laboratory and South Warehouse. Therefore, the pattern of elevated readings may reflect at least in part the presence of these ferrous sewers rather than soil impacts.
- Former Tank Farm D, located in the southwestern corner of the plant site. Conductivities were slightly elevated (70-100 mm/m) along a waterline to the southeast of the former tank farm. The highest conductivities (140-160 mm/m) occurred in a linear pattern along the storm sewer on the western edge of the site. Again, the elevated readings appear to identify these buried pipelines.

Remaining conductivities in all other parts of the plant site were at or below background values (70 mm/m) expected for silts and clays.

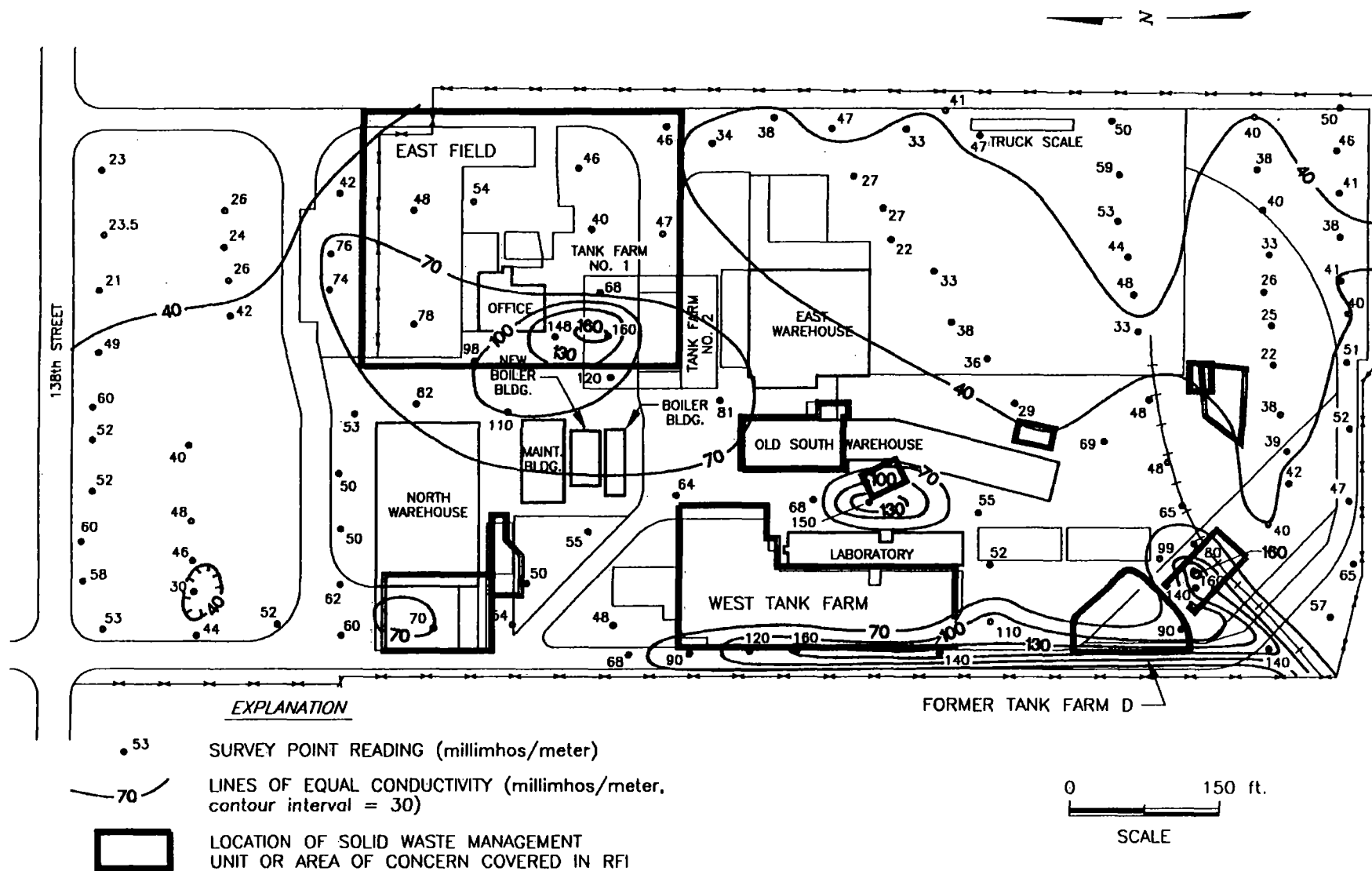


FIGURE 3-5 :PREVIOUS CONDUCTIVITY SURVEY (VERTICAL ORIENTATION), SAFETY-KLEEN CORP. RECYCLE CENTER CENTER DOLTON, ILLINOIS (from ATEC, 1988)

3.1.4 Soil Quality Data

Soil quality information is summarized on Figure 3-6. Quantitative data are taken from environmental investigations conducted in 1988, 1990, and 1991. The soil quality data are summarized in Table 3-1.

3.1.4.1 Previous Qualitative Soil Quality Results

The previous qualitative results correlate with the results of the soil gas survey and geophysical survey. Four areas of soil impacts on the plant site were qualitatively described in the borehole logs:

- East Field (Boreholes 79-3, 88-1), where impacts were noted at 6.5 to 8.5 feet below ground surface in 1988. S-K excavated drums and impacted soils in this area in 1991 during installation of a sewer line. Therefore, remedial activities have taken place in this area.
- West Tank Farm (Boreholes 79-2, 79-5, 79-6, 81-2, 88-2), where impacts were noted in the upper 4 feet in the south end and to 15 feet at the north end during three investigations.
- Former Tank Farms (Boreholes 83-3, 83-10, 83-12, 83-13), where impacts were noted generally to depths of 12-15 feet.
- North Warehouse Pad (Borehole 81-1), where impacts were noted to a depth of 4 feet.

The data collected during the Phase I RFI confirmed these earlier results.

The previous borehole logs provide a qualitative measure of the extent of soil impacts. All the boreholes outside of the four areas mentioned above contained no mention of impacted soils. In the 12 borehole logs which mentioned impacts, all 12 logs indicated clean soils beneath the shallow intervals described above. Therefore, the qualitative descriptions provide evidence of the capability of the low permeability clay soils underlying the site to minimize the potential for vertical migration of released constituents. The Phase I RFI borehole logs and deep soil quality data indicated no visually detectable degradation, and only minor impacts at depth (Chapter 6).

3.1.4.2 Quantitative Soil Quality Results

Soil sampling and analysis was conducted at five locations (88-1, 88-2, 88-4, 88-5, 88-6) in and near the SWMUs in 1988. These locations were screened as impacted during the soil gas and geophysical surveys in 1988. Samples were collected at 2.5 feet below ground surface at all locations except 88-2, where samples were collected at 2.5-foot intervals from 2.5 to 10 feet below ground surface. The results are presented in Table 3-1, and summarized below:

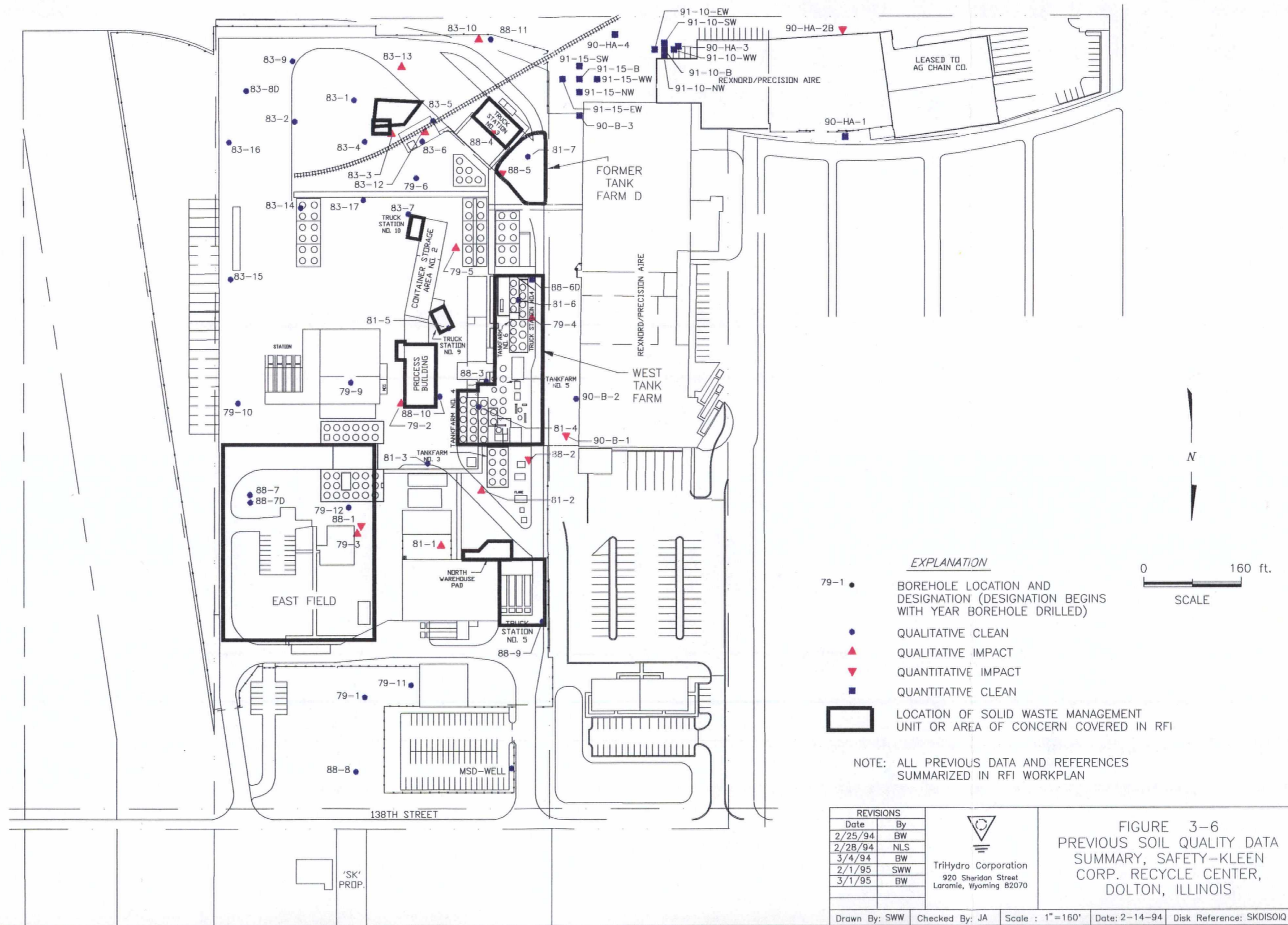


Table 3-1a. Summary of Previous Soil Quality Data (Volatile Organic Compounds), Dolton Recycle Center, Dolton, Illinois.

Location	Volatile Organic Compounds (mg/kg)										All Others
	Acetone	Benzene	Ethylbenzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methylene Chloride	Toluene	1,1,2-Trichloroethane	Trichloroethene	Xylenes, Total	
Plant Site^a											
88-1(2.5)	7.4	ND	10	6	4.2	0.25	65	0.44	ND	95	ND
88-2(2.5)	2.2	0.41	48	1.2	9.9	ND	680	ND	5.3	1400	ND
88-2(5)	2.5	ND	11	2.1	20	ND	110	ND	ND	28	ND
88-2(7.5)	ND	ND	0.32	ND	ND	ND	0.43	ND	ND	1.1	ND
88-2(10)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
88-4(2.5)	5.6	0.024	1.5	0.74	3.6	0.11	58	ND	ND	22	ND
88-5(2.5)	1400	ND	57	1.6	12	ND	390	ND	ND	290	ND
88-6D(2.5)	ND	ND	ND	ND	ND	ND	0.045	ND	ND	ND	ND
Precision Aire Site											
90-B-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
90-B-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
90-HA-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
90-HA-2B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
90-HA-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
90-HA-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Precision Aire Site - 10,000-Gallon UST Excavation											
91-10-B	--	ND	ND	--	--	--	ND	--	--	ND	--
91-10-EW	--	ND	ND	--	--	--	ND	--	--	0.005	--
91-10-NW	--	ND	ND	--	--	--	ND	--	--	ND	--
91-10-SW	--	ND	ND	--	--	--	ND	--	--	ND	--
91-10-WW	--	ND	ND	--	--	--	ND	--	--	ND	--
Precision Aire Site - Two 15,000-Gallon USTs Excavation											
91-15-B	--	ND	ND	--	--	--	ND	--	--	ND	--
91-15-EW	--	ND	ND	--	--	--	ND	--	--	ND	--
91-15-NW	--	ND	ND	--	--	--	ND	--	--	ND	--
91-15-SW	--	ND	ND	--	--	--	ND	--	--	ND	--
91-15-WW	--	ND	ND	--	--	--	ND	--	--	ND	--

^a Depth below ground surface (in feet) shown in location designation.

Table 3-1b. Summary of Soil Quality Data (TRPH, PCBs, and Metals), Dolton Recycle Center, Dolton, Illinois.

Location	TRPH (mg/kg)	PCB (mg/kg)	Metals (mg/kg)							
			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Background ^a	--	--	8.4	500	--	50	70	0.26	1	--
<u>Plant Site^b</u>										
88-1(2.5)	--	--	9	40	0.5	1.2	5.7	0.4	1	0.5
88-2(2.5)	--	--	9.3	41	0.5	1.3	9.5	0.4	1	0.5
88-4(2.5)	--	--	7.8	44	0.6	12	26	0.4	1	0.5
88-5(2.5)	--	--	8	47	0.6	1.4	13	0.4	1	0.5
88-6D(2.5)	--	--	6.7	28	0.5	7.9	3.4	0.4	1	0.5
<u>Precision Aire Site</u>										
90-B-1	270	ND	--	--	--	--	--	--	--	--
90-B-3	ND	ND	--	--	--	--	--	--	--	--
90-HA-1	ND	ND	--	--	--	--	--	--	--	--
90-HA-2B	1410	ND	--	--	--	--	--	--	--	--
90-HA-3	810	ND	--	--	--	--	--	--	--	--
90-HA-4	ND	ND	--	--	--	--	--	--	--	--

^a Background soil metals concentrations in Cook County from Boerngen and Schacklette, 1981.

^b Depth below ground surface (in feet) shown in location designation.

- **East Field (Location 88-1).** Xylenes, toluene, and ethylbenzene were measured at concentrations greater than 10 ppm. These constituents are principal components of mineral spirits. Only two chlorinated compounds were detected (1,1,2-trichloroethane at 0.4 ppm and methylene chloride at 0.25 ppm) at concentrations near the detection limit. Eight inorganic constituents were analyzed, and concentrations were at expected background levels.
- **West Tank Farm (Locations 88-2 and 88-6D).** Just as at the East Field, xylenes, toluene, and ethylbenzene were measured at concentrations greater than 10 ppm in samples collected to 5 feet below ground surface at Location 88-2. No other VOCs (including no chlorinated VOCs) were detected at the West Tank Farm. VOC concentrations attenuated to below detection limits at 10 feet at Location 88-2. VOC concentrations were near or below detection limits at Location 88-6D. Concentrations of inorganic constituents were at expected background levels.
- **Former Tank Farm D (Locations 88-4 and 88-5).** Just as at the other two SWMUs, xylenes, toluene, and ethylbenzene were measured at concentrations greater than 10 ppm. In addition, acetone and methyl isobutyl ketone (4-methyl 1,2-pentanone), which are principal components of lacquer thinner, were measured at concentrations greater than 10 ppm. Methylene chloride (0.1 ppm at 88-4) was the only chlorinated VOC detected. Concentrations of inorganic constituents were at expected background levels.

The soil quality data collected during the Phase I RFI indicated impacts in each of these three areas, with the detection of similar VOC constituents as those indicated by the previous data.

3.2 Ground-Water Conditions

During three previous ground water investigations at the site, information had been generated in the vicinity of the solid waste management units (SWMUs) designated in the Part B Permit. The following ground-water information has been collected on the site:

- Physical descriptions of ground-water occurrence at 37 locations.
- Permeability data on the perched water-bearing zone and underlying clay aquitard.
- Fluid level data at 27 locations in the perched water-bearing zone and three locations in the dolomite aquifer.

- Water quality data at 21 locations in the perched water-bearing zone and three locations in the dolomite aquifer.

The ground-water data collected during these investigations led to the identification of the same three impacted areas as described in Section 3.1. In addition, the data identify site-specific conditions which limit the potential migration of ground-water impacts.

Per the Part B Permit, ground water was not a medium under investigation during Phase I of the RCRA Facility Investigation (RFI). However, the previous ground-water data are summarized below because they are relevant to the comprehensive RFI, and because they provide a basis for evaluating the ground water data that S-K voluntarily collected during Phase I. A detailed presentation of the previous ground-water data is presented in the RFI Workplan.

3.2.1 Regional Hydrogeology

The regional hydrogeology includes two shallow, water-bearing zones: a near-surface water-bearing zone perched on low permeability clays and silts and the Niagaran Dolomite aquifer. The shallow perched zone is generally 10-20 feet thick. Because the topography in the area is flat, the flow gradients in the perched zone are small. Ground water generally flows toward the nearest surface water body; but the flow direction can be locally influenced by leaky water lines and sewers and sump pumps (ATEC, 1988).

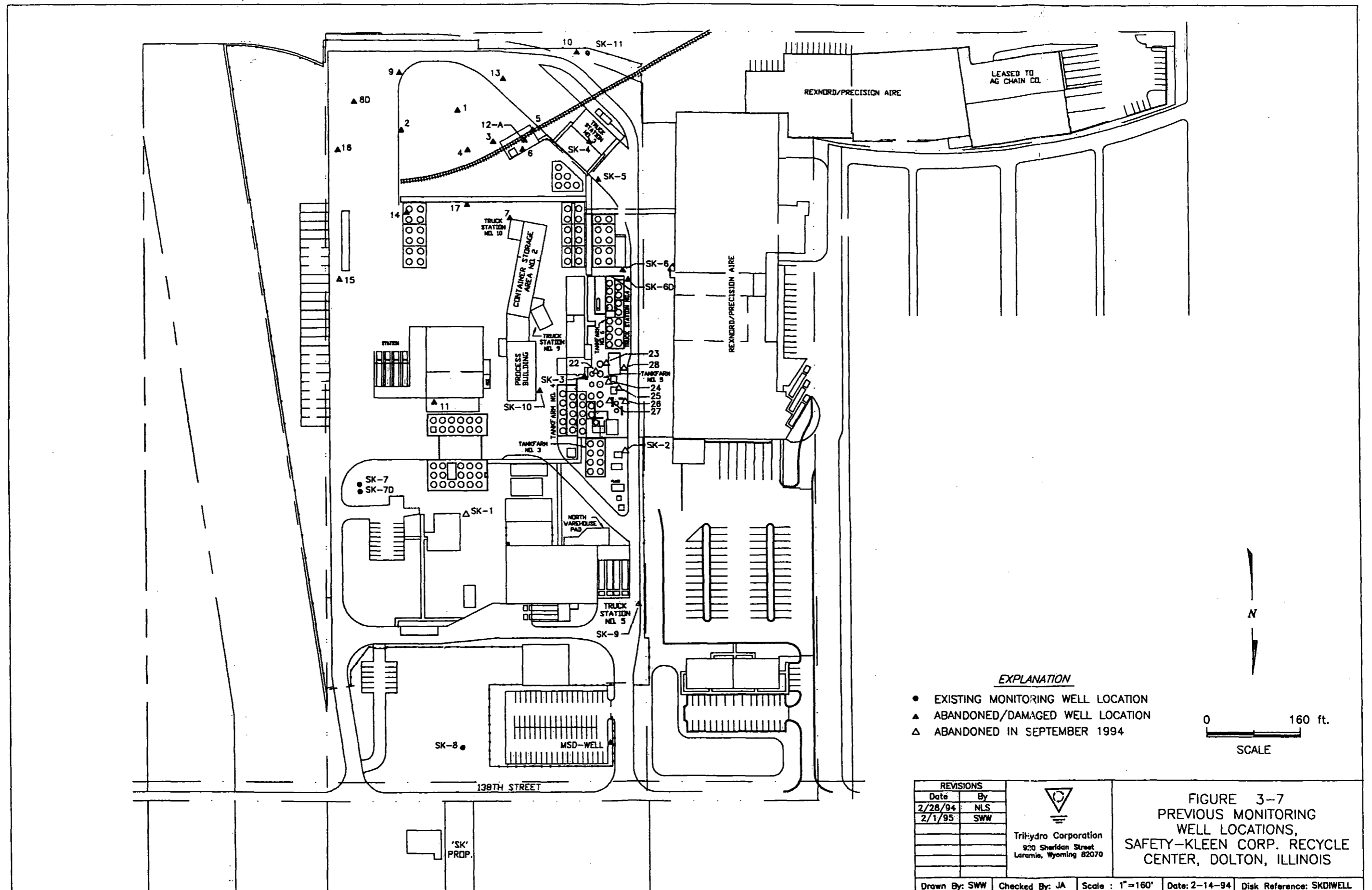
The Niagaran Dolomite aquifer is capable of producing significant yields of potable water. The regional flow direction in the dolomite is reported to be generally east or southeast in the direction of dip (ATEC, 1988).

3.2.2 Ground-Water Occurrence

Prior to the Phase I RFI, thirty-eight monitoring wells had been installed at the plant site — one by the Metropolitan Sanitary District and 37 by current or past owners of the site. The existing and abandoned/damaged monitoring well locations are shown on Figure 3-7. The locations of several wells that were abandoned in conjunction with the RFI field activities are shown on Figure 3-7.

The occurrence of ground water at the facility is consistent with the regional hydrogeology. A shallow perched water-bearing zone at depths of 1 to 5 feet below ground surface is present where permeable materials (fill and fine sand) are present. The shallow zone reaches its maximum thickness in the southeastern part at 15 feet. The shallow zone has been absent in Well SK-8, located in the northeast corner, since the well was installed in 1988. Low permeability clay is present from ground surface to total well depth (10 feet) at SK-8.

A clay aquitard at least 30 feet thick underlies the entire facility. Previous falling head permeability test results on clays from two locations on the east and west



sides of the plant (SK-6D at 22-22 feet and SK-7D at 30 feet), yielded permeabilities of 2.7 to 5.5×10^{-8} cm/sec. Based on this low permeability and thicknesses greater than 30 feet across the entire site, the clay layer serves as an effective aquitard to minimize the potential for downward migration of constituents in the perched zone to the dolomite aquifer.

Underlying the clay aquitard is the dolomite aquifer at 45 feet below ground surface. Water was encountered near the bedrock surface in the three shallow bedrock monitoring wells installed at the site (SK-6D, SK-7D, 8D). Water supply wells at and near the facility are completed considerably deeper in bedrock; total depths of the water supply wells are a minimum of 210 feet below ground surface.

3.2.3 Ground-Water Flow Directions

Fluid levels were measured in the perched water zone on three occasions prior to the RFI - November 1983, November 1988, and September 1993. The potentiometric surface elevations and contour lines for the most comprehensive measurement (November 1988) are shown on Figure 3-8. Ground water in the perched zone tends to flow from the southwestern corner toward the east, north, and west property boundaries. The perched water-bearing zone was absent in the northeastern part of the facility in 1988 and 1993. The gradient is flat through much of the facility, and thus flow rates will be low in those areas.

Ground-water levels are higher in the southwestern corner due to a leaky older water line which runs along the railroad tracks from the Precision Aire property to Truck Station No. 3. The rest of the facility is served by new water lines which enter the site from the north.

The storm sewers run north-south along the east and west sides of the plant site. Ground water was known to infiltrate the sewers up to 1989, when they were replaced by Safety-Kleen Corp., and may have contributed to the flow gradients shown on Figure 3-8. The new storm sewers were inspected by the Illinois Environmental Protection Agency in 1992, and found not to be leaking.

Fluid levels were measured in the three dolomite aquifer wells in November 1988. Ground-water flow is toward the southwest, based on the 1988 data. Regionally, ground water in the dolomite aquifer is reported to flow eastward toward Lake Michigan. The difference between local and regional flow directions in the bedrock aquifer may be due to local pumping of water supply wells.

3.2.4 Ground-Water Quality

Ground-water quality was monitored in October-November 1983 and in October 1988. Sampling was conducted in the southeastern part of the plant in 1983, and throughout the plant in 1988. The results are summarized in Table 3-2 and on Figure 3-9.

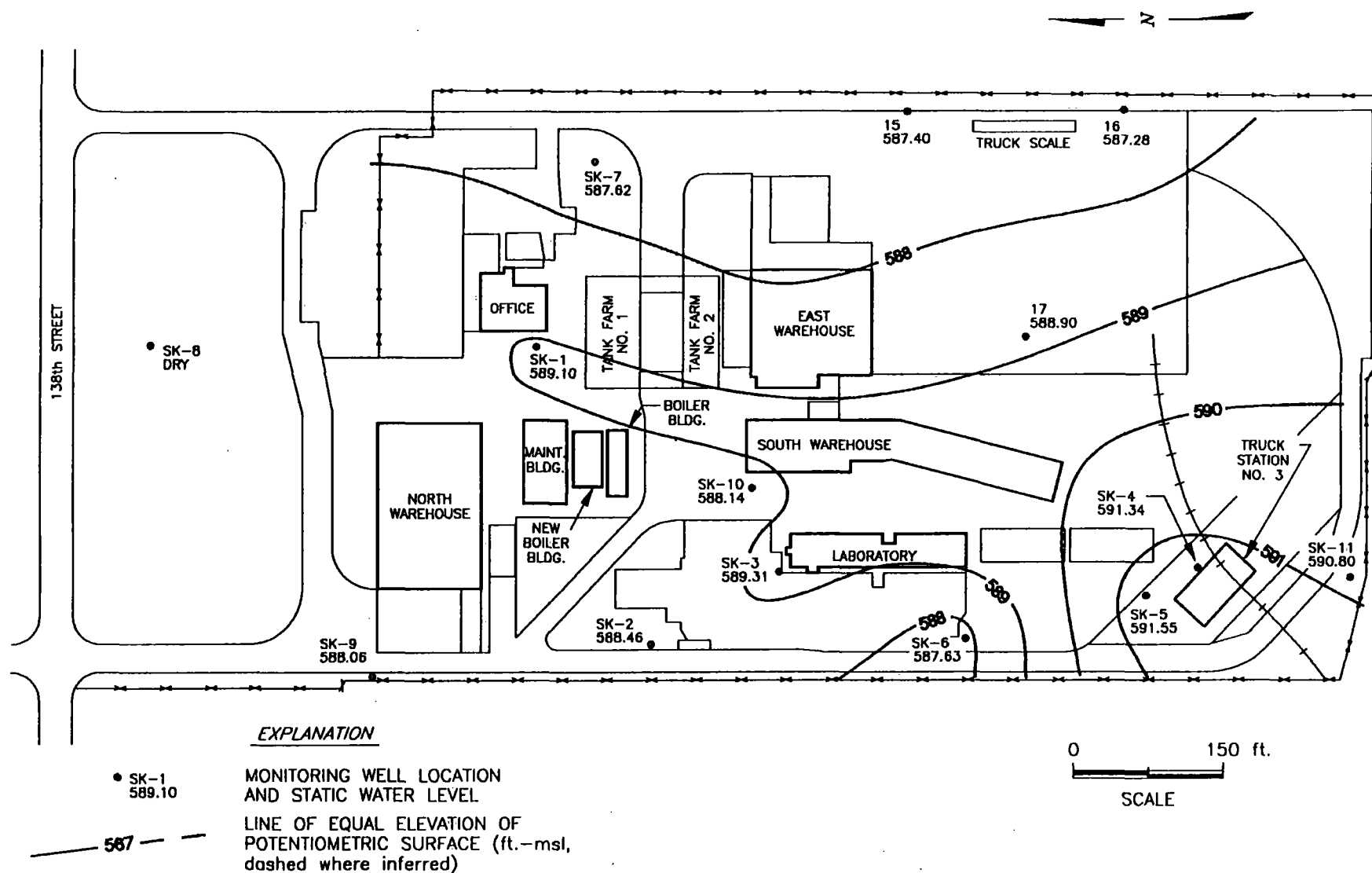


FIGURE 3-8 : POTENTIOMETRIC SURFACE, PERCHED ZONE, SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS (November 1988)

Table 3-2a. Summary of Previous Ground-Water Quality Data, Safety-Kleen Corp. Recycle Center, Dolton, Illinois.

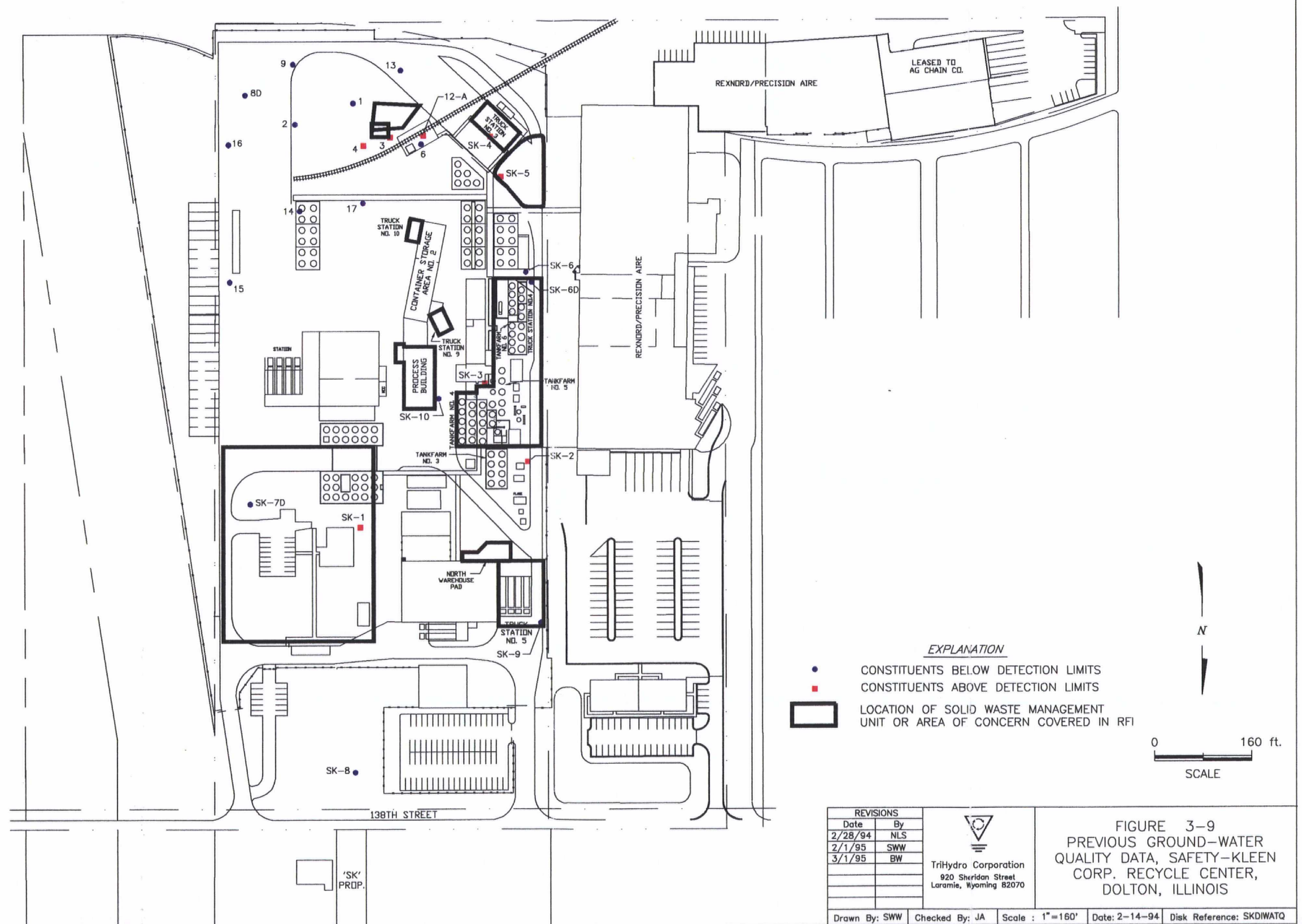
Well	Date	Volatile Organic Compounds (mg/L)																		Xylenes, Total	All Others
		Acetone	Benzene	Chloro- ethane	trans-1,2- Dichloro- ethene	1,1- Dichloro- ethane	1,1- Dichloro- ethene	Ethyl- benzene	2-Hexanone	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methylene Chloride	Tetrachloro- ethene	Toluene	1,1,1- Trichloro- ethane	Trichloro- ethene	Vinyl Acetate				
SK-1	10-88	ND	0.005	0.2	0.023	0.012	0.006	ND	ND	ND	ND	0.014	0.059	ND	0.038	0.011	0.019	0.012	ND		
SK-2	10-88	15(B)	0.055	ND	ND	ND	ND	0.31	ND	6.8	12	0.18	ND	8.7	ND	0.053	ND	1.8	ND		
SK-3	10-88	3(B)	ND	ND	ND	ND	ND	ND	ND	0.82	0.37	ND	ND	0.32	ND	0.058	ND	0.054	ND		
SK-4	10-88	15(B)	0.02	ND	ND	ND	ND	ND	0.018	1.4	1.8	1.6	ND	0.77	ND	ND	ND	0.81	ND		
SK-5	10-88	130(B)	ND	ND	ND	ND	ND	ND	ND	11	64	ND	ND	230	ND	ND	ND	7.3	ND		
SK-6	10-88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
SK-6D	10-88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
SK-7D	10-88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
SK-8	10-88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
SK-10	10-88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
2	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
3	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	0.018	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	0.018	--	--	--	--		
4	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	0.06	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--		
6	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	0.001	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
8D	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	10-88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
9	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
12A	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	0.78	--	--	--	--		
13	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
14	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
16	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
18	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
17	10-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		
	11-83	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--		

Note:

"B" means constituent detected in blank(s)

Table 3-2b. Summary of Previous Ground-Water Quality Data, Safety-Kleen Corp. Recycle Center, Dolton, Illinois.

Well	Date	TPH (ppb)	Total Metals (mg/L)							
			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
SK-1	10-88	--	ND	ND	ND	ND	ND	ND	ND	ND
SK-2	10-88	--	ND	ND	0.01	ND	ND	ND	ND	ND
SK-3	10-88	ND	--	--	--	--	--	--	--	--



As shown on Figure 3-9, ground-water quality impacts were identified in the East Field (SK-1), at the West Tank Farm (SK-2, SK-3), and east of Former Tank Farm D (SK-4, SK-5, 3, 5, 12-A). Volatile organic constituents (VOCs) and metals were not detected at the other ground-water monitoring locations.

The nature of ground water impacts due to VOCs at each area is described below:

- East Field. Benzene and chlorinated VOCs (chloroethane, trans 1,2-dichloroethene, 1,1,-dichloroethane, 1,1-dichloroethene, tetrachloroethene, 1,1,1-trichloroethane, trichloroethene, and methylene chloride) were detected.
- West Tank Farm. Acetone, BETX constituents, ketones (methyl-ethyl-ketone, 4-methyl-2-pentanone), and chlorinated VOCs (trichloroethene, methylene chloride) were detected .
- Former Tank Farm D. Acetone, benzene, toluene, xylene, ketones (methyl-ethyl ketone, 2-hexanone, 4-methyl-2-pentanone), and chlorinated VOCs (1,1,1-Trichloroethane, methylene chloride) were detected.

Total metals concentrations were consistently at or below detection limits in the East Field (SK-1) and West Tank Farm (SK-2).

CHAPTER 4.0

SOIL SAMPLING INVESTIGATIVE PROCEDURES

The objectives of the soil sampling investigation of the Phase I Release Assessment RFI at the Dolton Recycle Center were to:

- Determine if a release of hazardous waste or hazardous constituents has occurred, is occurring, or could occur from solid waste management units (SWMUs) to soils or air at the Dolton Recycle Center.
- If a release has occurred, determine its nature and degree.

This chapter presents the investigative procedures used to accomplish these objectives. This chapter also presents the investigative procedures used for the voluntary additional soil sampling conducted by S-K to evaluate the vertical extent of soil impacts. These data will be used to design the Phase II investigation.

Sampling and analysis procedures were implemented in a manner which promoted the quality assurance goals presented in the Quality Assurance Project Plan (QuAPjP; Section VII of the RFI Workplan). These goals were to obtain precise, accurate, complete, comparable and representative data. An evaluation of the degree to which these goals were achieved, and a discussion of data which have been qualified are presented in the Quality Assurance Project Report (Appendix B).

The sampling locations and investigative procedures for collection of the soil samples at the Dolton Recycle Center south of 138th Street are presented in Sections 4.1 through 4.3. Due to the different nature of the investigation at the Barker Chemical No. 2 site, these procedures are presented separately in Section 4.4.

As specified in the IEPA approval letter dated August 30, 1994, the collection of background samples was deferred until after the nature and extent of impacts have been defined. Therefore, background soil samples were not collected as part of the Phase I investigation.

4.1 SWMU Soil Sampling Locations

Sampling locations were selected to provide the best indication of a release or potential release of hazardous wastes or hazardous constituents, and the best information on the nature of a release. Sampling was performed in areas of known releases, in areas where previous field screening and laboratory data indicate releases have occurred, and in areas where experience from similar sites indicates releases are most likely to occur. Previous data collected at the site are described in Chapter 3.

Twenty-five locations south of 138th Street were sampled to identify and characterize releases to soils and shallow perched ground water. Criteria used to select sampling locations were:

1. Within or adjacent to SWMUs. For areas with secondary containment (truck stations and West Tank Farm), sampling was performed next to the containment, because of access problems at several locations and concerns about damaging containment integrity at all locations.
2. In areas of known impact, based on previous soil data (Figure 3-6) and ground-water data (Figure 3-9) from the laboratory.
3. In areas of suspected impact, based on field screening and qualitative information (see Chapters 2 and 3).
4. Areas where releases are more likely, which include valve locations where wastes are transferred between tank and tanker.

The SWMU sampling locations south of 138th Street are shown on Figure 4-1. The rationale for the sampling locations is described below. Some of the SWMUs have been grouped into "SWMU areas" based on proximity of units and restricted access in certain parts of the facility. Soil sampling locations and rationale for the Barker Chemical No. 2 Area, located north of 138th Street, are presented in Section 4.4.

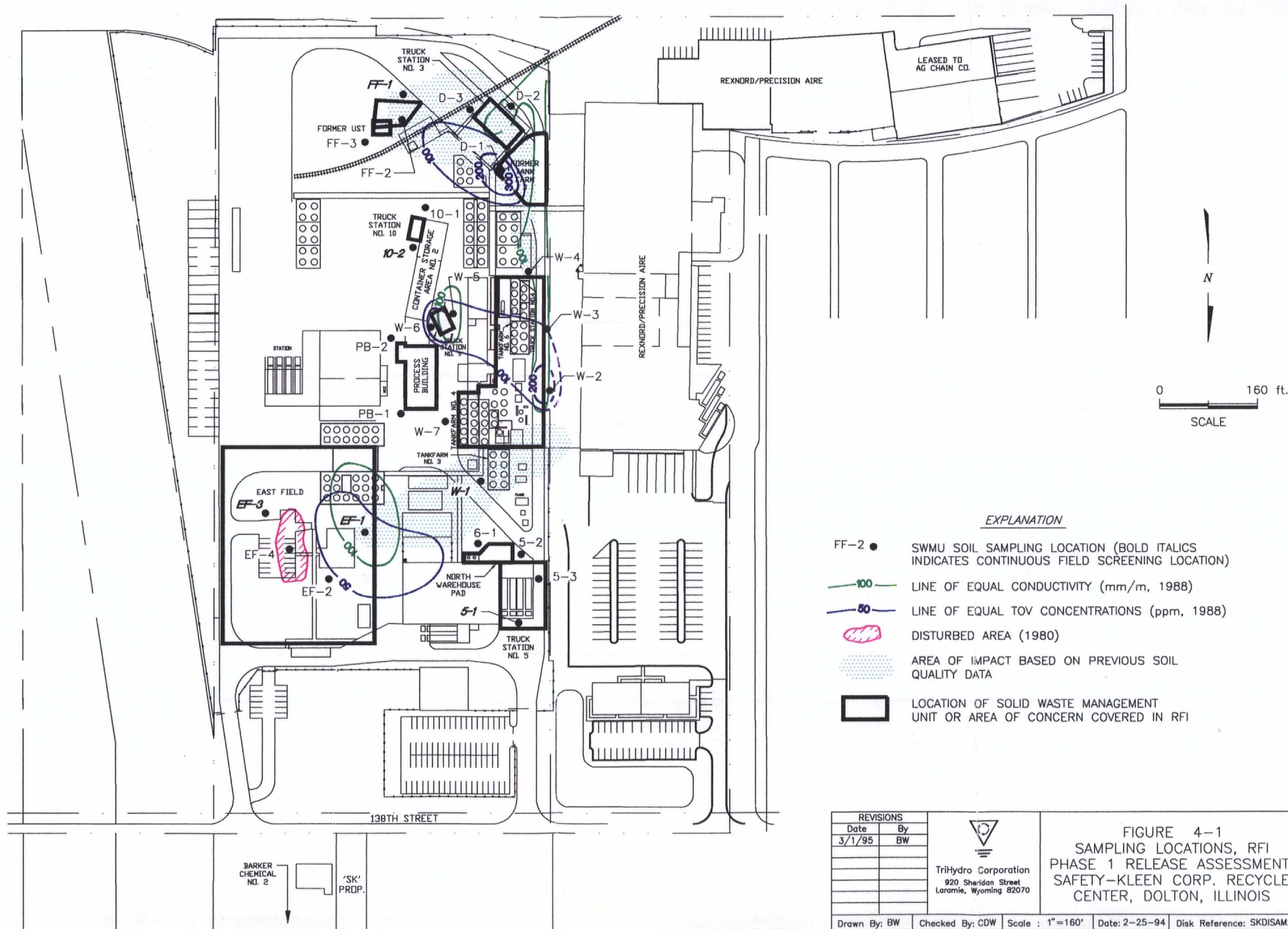
4.1.1 East Field

Four locations were sampled in the East Field area:

- EF-1. Area of highest soil gas and conductivity readings in 1988 (Figures 3-4 and 3-5). Nearby Borehole 88-1 showed quantitative soil impacts (Figure 3-6). Near area where 12 drums excavated during sewer line installation in 1988.
- EF-2. Adjacent to apparent area of drum excavation on 1980 aerial photo (Figure IV-1-3 of RFI Workplan) and area of elevated soil gas readings (Figure 3-4).
- EF-3. Adjacent to apparent area of drum excavation on 1980 aerial photo and near existing dolomite aquifer Well 88-7D, which indicated clean water when sampled in 1988.
- EF-4. Through apparent area of drum excavation in 1980 aerial photo.

4.1.2 Truck Station No. 5/North Warehouse Pad

The Truck Station No. 5/North Warehouse Pad area includes the former location of Truck Station No. 6. Four locations were sampled in this area:



- 5-1. At entrance to truck station and near area of slightly elevated conductivity (Figure 3-5).
- 5-2. In former gravel area adjacent to truck station and also at entrance to former Truck Station No. 6.
- 5-3. Adjacent to low area of sloped containment pad in Truck Station No. 5.
- 6-1. Near day tanks and containment sump, and in area of slightly elevated soil gas readings (Figure 3-4).

4.1.3 West Tank Farm/Driveway to Facility

The West Tank Farm/Driveway area also includes Truck Station No. 4 and Truck Station No. 9. These areas are proximate and located in a part of the plant with relatively limited access. For those reasons, they have been grouped into a single SWMU area. Seven locations were sampled in this SWMU area:

- W-1. In area of qualitative impacts (Borehole 81-2 on Figure 3-6).
- W-2. Area of highest soil gas and conductivity readings (figures 3-4 and 3-5).
- W-3. Area of elevated soil gas and conductivity readings, and near piping and valves of Truck Station No. 4.
- W-4. At entrance to Truck Station No. 4, in area of elevated soil gas and conductivity readings (figures 3-4 and 3-5).
- W-5 and W-6. Adjacent to Truck Station No. 9 and in area of highest soil gas and conductivity readings (figures 3-4 and 3-5).
- W-7. Accessible area adjacent to east side of Tank Farm No. 4. Location completes assessment of potential impacts around perimeter of West Tank Farm.

4.1.4 South Warehouse Process Area

In accordance with Condition 4 of the approval letter dated August 30, 1994, four borings were sampled in the vicinity of the Process Area:

- PB-1. Located at the northeast corner of the Process Area building in the vicinity of boring 79-2 in which qualitative impacts were noted at depths between 2.5 and 5.0 feet below ground surface during the 1979 investigation.

- PB-2. Located at the southeast corner of the Process Area building adjacent to the ball mill room.
- W-6. Located at southwest corner of the Process Area building and in area of highest soil gas and conductivity readings.
- W-7. Located at northwest corner of the Process Area building.

In a phone conversation between Jack Bedessem of TriHydro Corporation and Eric Minder of IEPA, it was agreed that borings W-6 and W-7 could be used for the Process Area building as well as Truck Station No. 9 and the West Tank Farm because of the proximity of the units.

4.1.5 Former Tank Farm D/Truck Station No. 3

These two SWMUs are located adjacent to each other and have been grouped into a SWMU area. Three locations were sampled in this SWMU area:

- D-1. Adjacent to diked area of former Tank Farm D, at location of highest soil gas reading (Figure 3-4), and at location of Borehole 88-5, where quantitative soil impacts were measured in 1988. Location is also near the north entrance to Truck Station No. 3.
- D-2. Adjacent to low area of sloped containment pad in Truck Station No. 3 and near area of elevated conductivity (Figure 3-5).
- D-3. At south entrance to Truck Station No. 3 and between boreholes 88-4 (quantitative impact) and 83-10 (qualitative impact) (Figure 3-6).

4.1.6 Former Southeast Tank Farm

Three locations were sampled at the former tank farm in the southeastern part of the plant:

- FF-1. Near Borehole 83-13 (qualitative impact) (Figure 3-6) and within former tank farm.
- FF-2. Near Borehole 83-3 (qualitative impact) (Figure 3-6) and within former tank farm. The vault structure has been filled but is still in place, based on field survey and communication with site personnel in February 1994; therefore, the sampling location is located adjacent to the east side of the vault.
- FF-3. Adjacent to the west side of the former UST vault and possible down-gradient direction, based on 1988 ground-water elevation data.

4.1.7 Truck Station 10

Two locations were sampled adjacent to this truck station:

- 10-1 and 10-2. In graveled area adjacent to the low point of the sloped containment pad at the truck station.

4.2 Soil Sampling Depths

Soil samples for chemical analysis were collected at approximately 2 feet and 20 feet below ground surface. The purpose of this sampling regime was that data from the shallow depth could be used to identify soil impacts, and data from the greater depth could be used to evaluate vertical extent. The deep sample location (± 20 ft-bgs) was selected to be below the maximum depth of the bottom of the perched water zone (15 feet), as determined during previous investigations.

At several locations, the shallow interval sample was collected at a slightly deeper interval (maximum depth of 4.0 to 6.0 feet below ground surface) to allow collection below the zone of concrete slough created during the drilling process. In these cases soil was collected at the shallowest depth interval in which a coherent sample could be obtained.

4.3 Soil Sampling Procedures

All soil sampling at the Dolton Recycle facility south of 138th Street was conducted using a hydraulic probe mounted on a pick-up truck. Photodocumentation of sampling procedures is presented in Appendix C. Field notes are presented in Appendix D.

4.3.1 Soil Sample Collection

The hydraulic probe soil sampling procedure was as follows:

1. Concrete or asphalt surface was removed (if applicable).
2. A new or decontaminated brass liner assembly was placed into a stainless steel sampler (called a Kansas sampler). Samplers are 1 to 2 feet in length.
2. The sampler (decontaminated) was attached to drive rods which are 3 feet in length.

3. The sampling tool was hydraulically advanced to the sampling depth.
4. The tool was opened and driven 2 feet to fill the liner with a soil sample.
5. The tool was hydraulically withdrawn to the surface.
6. The brass liner was broken manually into sections by a field team member wearing sterile gloves.
7. The uppermost section was discarded, because it may contain borehole slough.
8. Two sections were capped with Teflon sheets and slip-on plastic caps, marked with a sample number, and placed in an opaque cooler on ice immediately upon collection. Care was taken to eliminate headspace during this procedure. Sample collection followed IEPA "Soil Volatile Sampling Procedures", except that Teflon sheeting rather than aluminum foil were used to seal the brass rings. The sample aliquots in the brass rings were used for the organic analyses.
9. The soil in the remaining section was subjected to field screening procedures described in the next section.
10. After field screening, the remaining aliquot was transferred to a 4-ounce glass jar with a Teflon-lined plastic cap and submitted to the laboratory for TCLP metals analyses.

At most locations ground-water sampling points were installed during the soil boring procedure (see Chapter 5). In these instances, the ground-water sampling point was installed to a depth of approximately ten feet following collection of the shallow soil sample. A second boring was drilled (offset by less than one foot from the original boring) for collection of the deep sample.

At six locations, samples were collected continuously for field screening and lithologic description (as required by Condition 13 of the IEPA letter dated August 30, 1994). These locations (5-1, EF-1, EF-3, FF-1, W-1, 10-2) are shown on Figure 4-1. Samples collected for field screening and lithologic logging only were collected using polybutyrate liners rather than brass rings.

Blind duplicate samples were collected from five of the SWMU sites for quality assurance analyses. Samples for the blind duplicate analyses were obtained by drilling a separate boring (offset from the original boring by less than one foot), and collecting a sample at the specified interval.

4.3.2 Field Screening Procedures

A soil sample aliquot was extruded from a brass ring (or polybutyrate liner) into a clean Ziploc bag and the headspace vapor in each bag was monitored with a portable

PID equipped with a 10.6 electron volt lamp. The TOV concentration in the headspace was measured through a small opening in the seal. TOV measurements were recorded in parts per million (ppm) relative to a 100 ppm isobutylene standard on the borehole logs (Appendix E).

4.3.3 Lithologic Logging

Following field screening for TOV, the soil sample aliquot in the Ziploc bag was inspected for lithology, texture, color, staining and relative moisture content. Unified Soil Classification System (USCS) designations for each soil sample were recorded on the borehole logs. The borehole logs are included in Appendix E. As required by IÉPA in Condition 13 of the August 30, 1994 approval letter, soil samples were collected continuously at six locations to characterize the lithologic conditions beneath the site.

4.3.4 Laboratory Analysis

Aliquots of soil sample were retained from each sampled interval for laboratory analysis. Samples for laboratory analysis were stored on ice in opaque coolers prior to shipment to the S-K Environmental Laboratory in Elk Grove Village, IL. Coolers were transported to the laboratory via courier. The transit times for shipment to the lab were less than three hours. All coolers were sealed with a custody seal, and accompanied by a Chain-of-Custody/Sample Analysis Request form. Completed copies of these forms are included in Appendix F. For each shipment, the field team leader confirmed sample arrival at the laboratory by telephone.

Each sample was analyzed for volatile organic compounds (VOCs by EPA Method 8240), semi-volatile organic compounds (SVOCs by EPA Method 8270), and the TCLP extract for the eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) as indicated in Table 4-1. Four soil samples and one duplicate were also analyzed for polychlorinated biphenyls (PCBs by EPA Method 8080). Five field duplicates were collected in accordance with the requirements of the RFI Workplan. The list of analyses and target constituents is presented in Table 4-1. The laboratory was instructed to meet the EQLs listed in SW-846 (Revision 1) for each of the analytical methods and to follow the level of QA/QC effort established in the QuAPjP (Chapter VII of the RFI Workplan). The EQLs and an evaluation of QA/QC data for all analyses are presented in the Quality Assurance Project Report in Appendix B.

4.3.5 Decontamination Procedures

Brass rings were decontaminated prior to sampling. All glass jars were certified as pre-cleaned by the independent supplier.

In the field, all sampling equipment (including brass rings, sampler tubes, cutting shoes, and drill points) was decontaminated with a detergent-water solution and rinsed in warm tap water followed by a distilled water rinse prior to constructing each

Table 4-1. Soils Constituent List, RFI Phase I Release Assessment, Dolton Recycle Center.

Constituent	Method (from SW-846)	Method Detection Limit
<u>Inorganics</u> (TCLP)	1311	
Arsenic	7060	0.05 mg/L
Barium	6010	2.0 mg/L
Cadmium	6010	0.005 mg/L
Chromium	6010	0.1 mg/L
Lead	6010	0.0075 mg/L
Mercury	7471	0.002 mg/L
Selenium	7740	0.05 mg/L
Silver	6010	0.05 mg/L
<u>Organics</u> *		
Volatile Organic Compounds (37)	8240	0.005-0.100 mg/kg
Semi-Volatile Organic Compounds (62)	8270	0.33-3.3 mg/kg
PCBs	8080	0.05 mg/kg

* A complete list of organic compounds and method detection limits for individual compounds are presented on laboratory data sheets in Appendix F.

borehole and before the hydraulic probe rig left the site. Decontaminated sampling devices and brass rings were stored in clean plastic bags.

All wash and rinse water was containerized at the Dolton facility prior to proper processing by S-K. All soil cuttings and sampling wastes were containerized in 55-gallon DOT drums. Sampling wastes were handled in accordance with applicable regulations through the S-K waste management program.

4.3.6 Borehole Abandonment

Sampling locations were plugged by pouring bentonite granules down the hole and hydrating in approximately two-foot lifts to the surface. All surfaces were repaired to grade. A concrete/asphalt patch was placed over sampling locations in areas where concrete/asphalt was present.

4.4 Barker Chemical No. 2 Area Investigation Procedures

The objectives of the Phase I investigation at the Barker Chemical No. 2 area were to determine whether waste disposal practices had taken place at this site, and, if so, is there a release from the wastes to soil or air.

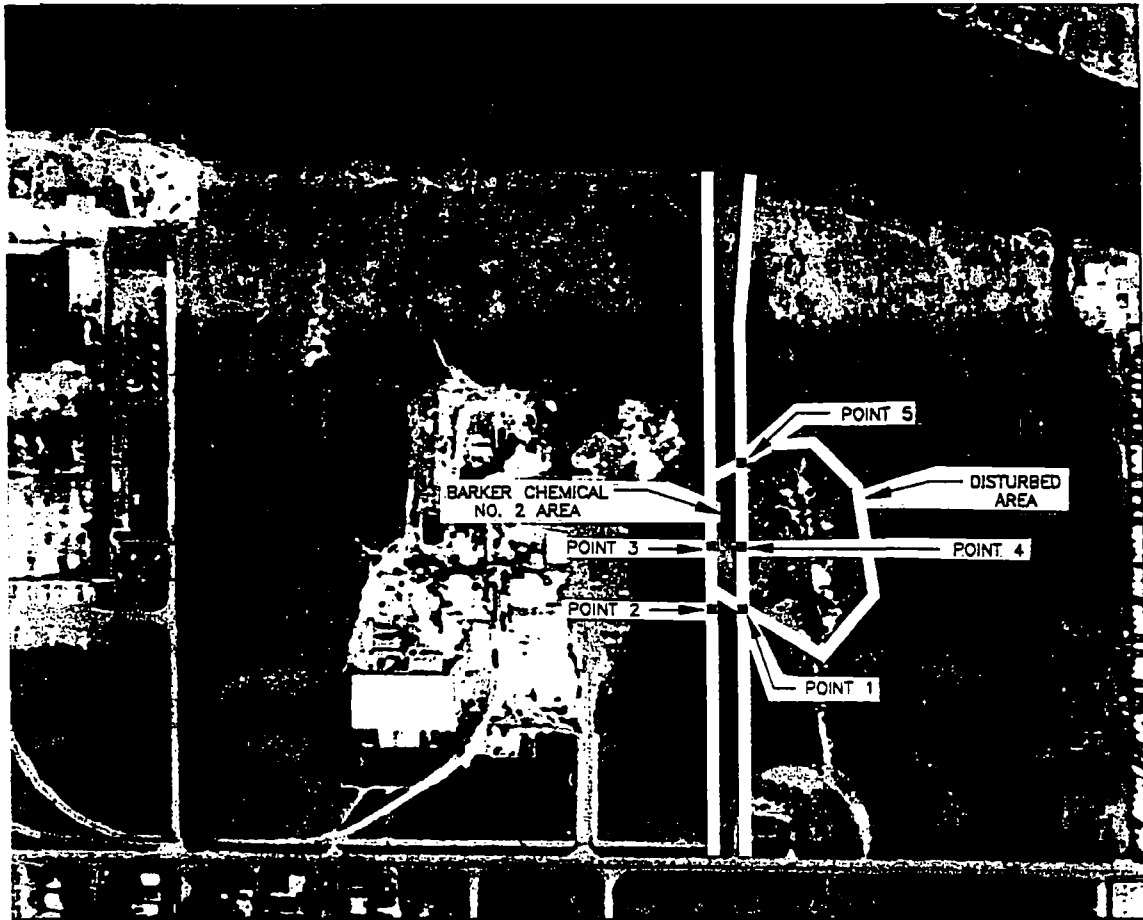
The RFI Workplan, as amended by the August 30, 1994 IEPA approval letter specified a soil gas survey and the collection of three shallow soil samples. After the discovery of partially exposed drums at the site, S-K voluntarily expanded the soil sampling effort to 11 shallow soil samples and two drum-contents samples. Eric Minder of IEPA was notified of and approved the expanded sampling effort by telephone. Deep soil samples and ground-water samples were not collected at the Barker Chemical No. 2 Site, pending results from the Phase I Soil Sampling Program.

4.4.1 Property Survey

A licensed land surveyor was contracted to locate the boundaries of the S-K property in the "disturbed area" shown on Figure 4-2. Points 1 through 5 were located in the field along the boundary of the S-K property using measurements on plat descriptions contained in the Part B Permit Application and existing survey markers on 138th St. and the western S-K property boundary. Points 1 through 5 were marked with flagging. A 12.5 foot grid system was then established based on these survey points.

4.4.2 Visual Reconnaissance Survey

A visual reconnaissance survey was conducted in conjunction with the soil gas survey. Descriptions of vegetation and the locations of partially buried drums and other



1980

FIGURE 4-2 :LOCATION MAP, BARKER CHEMICAL NO. 2
AREA (April 1980 Aerial Photo)

objects were noted relative to the grid system. Photographs of the site, with descriptions, are included in Appendix C.

4.4.3 Soil Gas Survey

The soil gas survey was conducted per the Workplan as amended roughly through the center of the property along a north-south pathway cut through the dense underbrush. Fifteen testholes were drilled at the site. Soil gas sampling locations were selected to provide adequate coverage of the area, and to sample in the vicinity of partially exposed drums. Some areas were inaccessible due to the dense underbrush.

One-inch diameter soil gas testholes were advanced to depths of approximately 2.5 feet with a rotary hammer drill powered by a portable generator. A soil gas sampling wand fitted with a top sealing device was inserted into each testhole following drilling. The soil gas sampling wand was connected to a photoionization detector equipped with a 10.6 eV lamp. The highest concentration of total organic vapors (in parts per million) was recorded for each testhole. The PID was calibrated prior to sampling using a factory prepared 100 ppm isobutylene standard. The functioning of the PID was checked frequently throughout the investigation.

4.4.4 Collection of Soil Samples

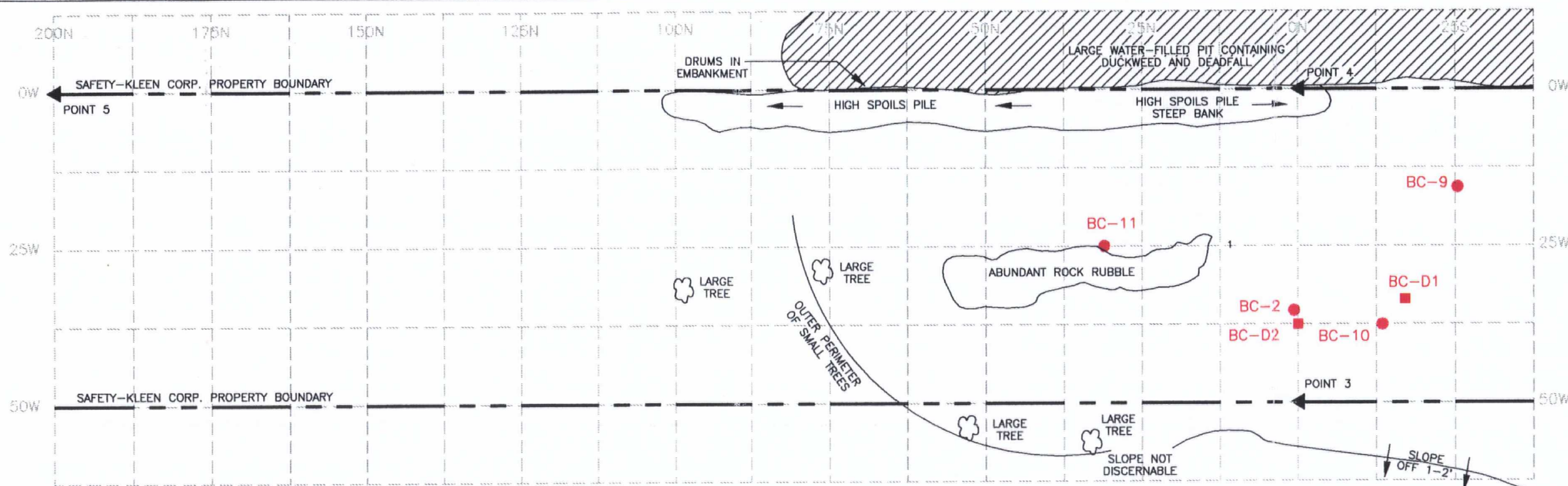
Eleven soil samples were collected from shallow depths (1-2 feet below ground surface) to identify releases of hazardous constituents from wastes to soils. Sampling locations were proportionally spaced throughout the disturbed areas, with consideration given to accessibility. The soil sampling locations are shown on Figure 4-3.

At each location, a shovel was used to clear the top one-foot of soil and plant material, and an auger and sampler were used to collect soil samples from the one-to-two foot interval. Soil samples were transferred immediately to glass jars and packed to eliminate headspace. One two-ounce jar and two four-ounce jars were collected per sample.

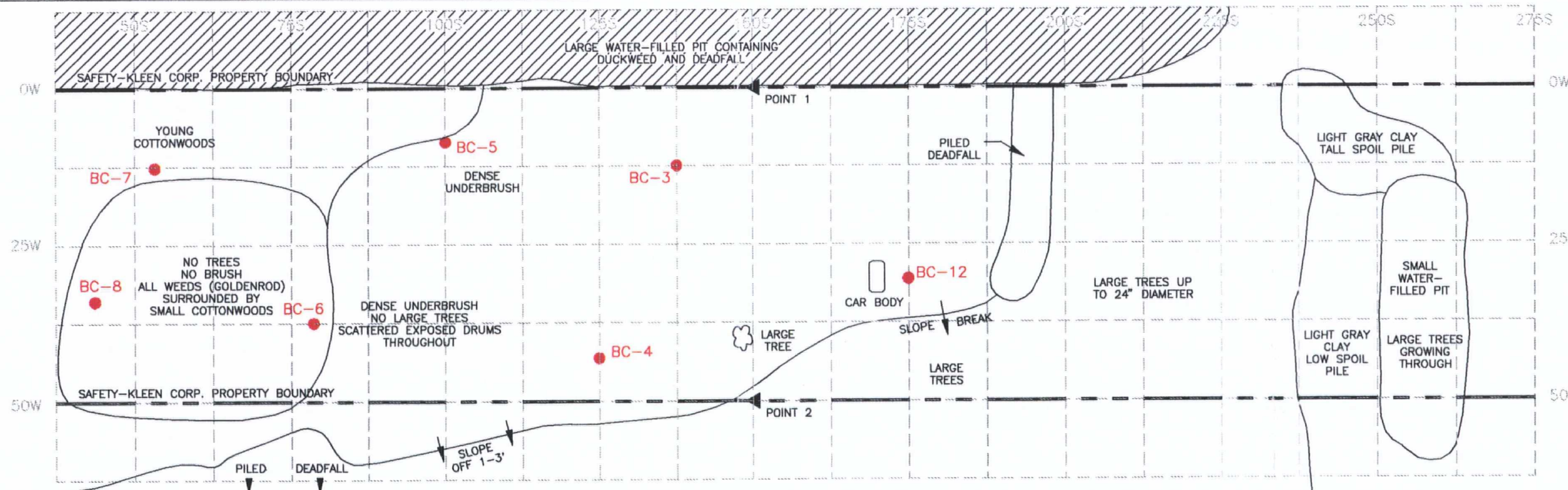
Samples for laboratory analysis were stored on ice in opaque coolers prior to shipment to the S-K Environmental Laboratory in Elk Grove Village, IL. Coolers were transported to the laboratory via courier. The transit times for shipment to the lab were less than three hours. All coolers were sealed with a custody seal, and accompanied by a Chain-of-Custody/Sample Analysis Request form. Completed copies of these forms are included in Appendix F. For each shipment, the field team leader confirmed sample arrival at the laboratory by telephone.

Each sample was analyzed for volatile organic compounds (VOCs by EPA Method 8240), semi-volatile organic compounds (SVOCs by EPA Method 8270), and the TCLP extract for the eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) as indicated in Table 4-1. Six soil samples were also analyzed for polychlorinated biphenyls (PCBs by EPA Method 8080). One field duplicate was collected in accordance with the requirements of the RFI Workplan.

NORTHERN SECTION



SOUTHERN SECTION



EXPLANATION

- SOIL SAMPLE LOCATION
- DRUM CONTENTS SAMPLE LOCATION
- ◀ SURVEY MARKER LOCATION

NOTES: All soil samples taken from depth of 1' to 2' below ground surface.

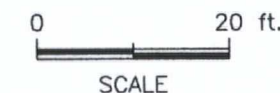


FIGURE 4-3 :SAMPLING LOCATIONS, BARKER CHEMICAL #2 AREA, NORTH OF 138th STREET, DOLTON, ILLINOIS (September 1994)

4.4.5 Drum Contents Sampling

The contents of two crushed drums were sampled. The drum samples are designated BC-D1 and BC-D2 on Figure 4-3. Drum samples were collected and handled in the same manner as the soil samples. The drum samples were analyzed for the same constituents as the soil samples. Drum sample BC-D1 was analyzed for PCBs.

CHAPTER 5.0

GROUND-WATER SAMPLING INVESTIGATIVE PROCEDURES

Although not required for Phase I by the Part B Permit, Safety-Kleen Corp. (S-K) conducted voluntary ground-water assessment during Phase I to identify and characterize ground-water quality impacts and further evaluate ground-water flow directions in the shallow perched zone. This information will be used to design appropriate activities during subsequent phases of the RCRA Facility Investigation (RFI). Ground water was not sampled at the Barker Chemical No. 2 site.

At the time of the RFI, there were several monitoring wells and piezometers remaining at the site from previous investigations. In conjunction with the RFI, most of these wells and piezometers were abandoned because either the completion details and screen condition were not known, or because they were located within containment areas. These abandoned wells and piezometers are shown on Figure 3-7. Ground-water was not sampled from the existing monitoring wells. Some piezometers were measured for water levels prior to abandonment.

5.1 Ground-Water Sampling Locations and Depths

Where feasible, ground-water sampling was conducted in conjunction with the soil sampling. Figure 5-1 indicates where ground water was sampled. In some locations, sufficient water for laboratory analysis was not obtained due to the low permeability of and/or limited amount of water in the shallow water-bearing zone. S-K sampled the first water-bearing zone, located at a depth of approximately 2 to 15 feet below ground surface. The screened intervals for the sampling points ranged are presented in Table 5-1.

5.2 Ground-Water Sampling Point Installation Procedures

Ground-water sampling points were installed using the hydraulic probe rig. Two types of sampling points were installed. Where possible, 1-inch diameter PVC casing and factory slotted screen were installed to serve as piezometers and sampling points. In this type of sampling point a boring was constructed to six to nine feet, the probe rods were withdrawn and a five-foot section of screen and a five foot section of riser (1-inch diameter PVC) were inserted into the hole. Any annular space present was filled with 10/20 silica sand, and sealed with bentonite at the surface.

Where conditions made installation of PVC unfeasible, perforated 3/8-inch diameter polyethylene tubing was installed. In this method, an expendable point was

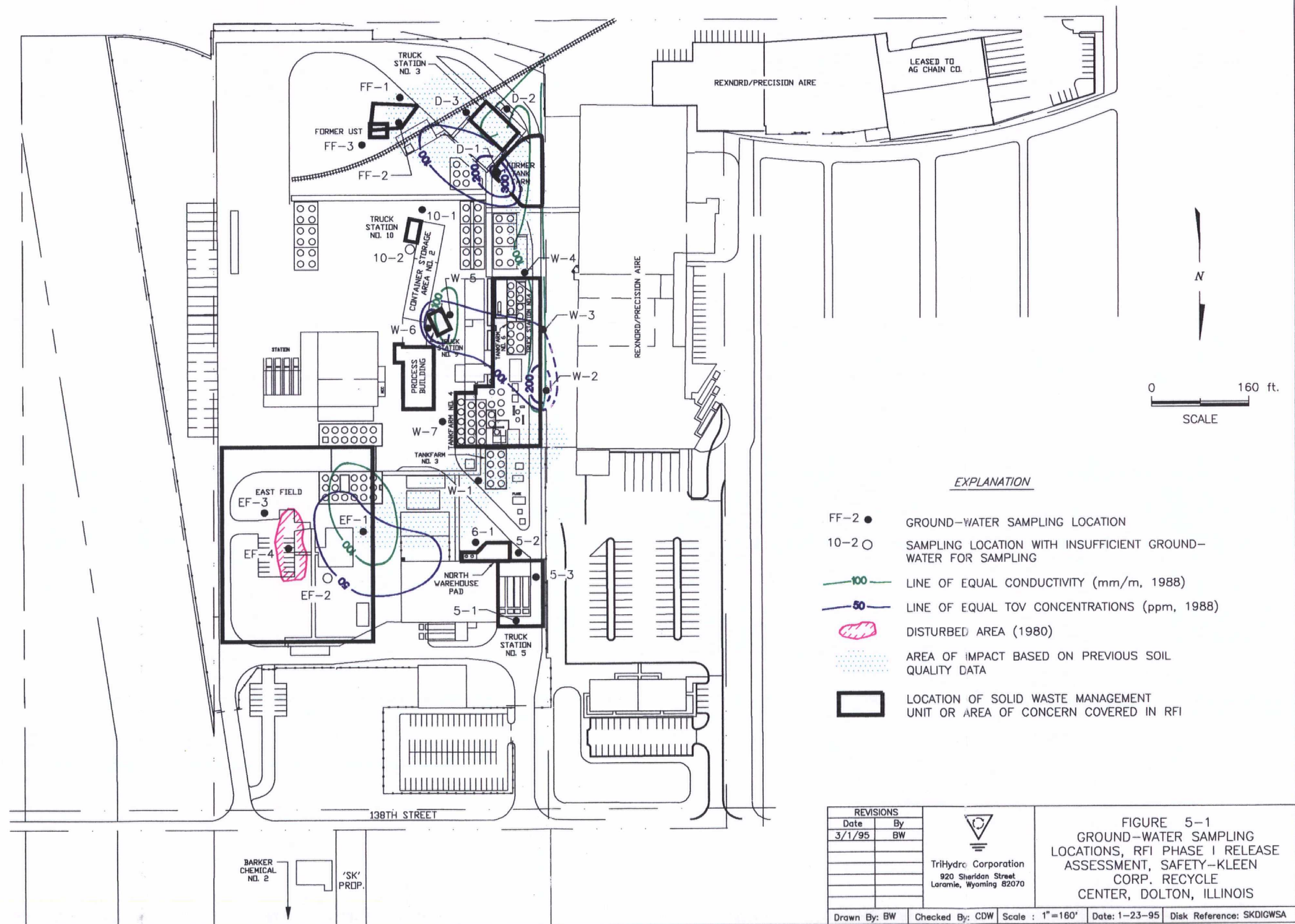


Table 5-1. Ground-Water Sampling Point Survey, Water Level, and Sampling Information, Phase I RCRA Facility Investigation, Safety-Kleen Recycle Center, Dolton, Illinois

Sampling Point	Type	Approx. Screened Interval (ft-bgs) ¹	Date of Installation	Date of Water level Meas.	Time of Water Level Meas.	Depth to Water (ft-bgs) ¹	Measuring Point Elevation ²	Stick-up height	Water level Elevation ²	Purging Information			Sampling Information		
										Purge Date	Purge Time	Volume Purged	Sampling Date	Sampling Time	Sampling Comments
5-1	EZ	3-10	9/15/94	--						9/21/94	1000	3 tubes	9/21/94	1000	3 VOAs, SVOCs then dry.
5-2	EZ	3-10	9/15/94	--						9/21/94	930	3 tubes	9/21/94	930	3 VOAs, SVOCs, then dry.
5-3	PZO	3-8	9/16/94	9/19/94	1020	4.17	99.08	0.90	94.01	9/20/94	1740	0.15 gall	9/20/94	1745	SVOCs then dry. Return for VOAs
6-1	PZO	4-9	9/15/94	9/19/94	1007	4.34	99.54	0.74	94.48	9/21/94	1130	0.10 gall	9/21/94	1130	3 VOAs, SVOC, then dry. Return for metals.
10-1	EZ	4-10	9/14/94	--						9/21/94	1645	3 tubes	9/21/94	1650	VOCs, 1/2 SVOCs then dry. Return for SVOCs, metals.
10-2	PZO	3-8	9/14/94	9/19/94	850	2.38	99.44	0.04	97.02	9/21/94	1630	0.10 gall	9/21/94	1635	Broken at ground surface, 1/4 SVOC then dry-mud. Did not sample.
D-1	EZ	3-10	9/16/94	--						9/20/94	1440	3 tubes	9/20/94	1445	VOCs, SVOCs then dry. No water for metals.
D-2	PZO	3.5-8.5	9/13/94	9/19/94	915	3.62	102.08	0.78	97.68	9/20/94	1500	0.15	9/20/94	1505	VOCs, SVOCs, Metals, then dry.
D-3	EZ	3-10	9/16/94	--						9/19/94	1725	3 tubes	9/19/94	1730	VOCs, SVOCs. Return 1/2 hr later, metals (barely), then dry.
EF-1	PZO	3-8	9/12/94	9/19/94	840	5.23	99.66	0.97	93.46	9/19/94	1310	0.10 (dry)	9/20/94	1100	3 VOAs then dry. Return 9/21 dry.
EF-2	PZO	2.5-7.5	9/12/94	9/19/94	835	5.15	99.36	0.86	93.35	9/19/94	1300	0.05 (dry)	--	--	DRY. Did not sample.
EF-3	PZO	4-9	9/12/94	9/19/94	830	5.3	99.3	0.90	93.1	9/19/94	1155	0.15 (dry)	9/20/94	1040	SVOCs, then dry. Return for VOCs.
EF-4	EZ	2-8	9/12/94	--						9/19/94	1220	3 tubes	9/19/94	1225	3 VOCs, SVOCs, metals. In basin fill, produced water well.
FF-1	PZO	4-9	9/13/94	9/19/94	908	4.92	103.41	0.71	97.78	9/19/94	1635	0.2	9/19/94	1640	VOCs, SVOCs, then dry.
FF-2	PZO	4-9	9/14/94	9/19/94	904	4.73	103.12	1.02	97.37	9/19/94	1610	0.25	9/19/94	1620	VOCs, SVOCs, metals.
FF-3	PZO	4.5-9.5	9/14/94	9/19/94	900	4.23	102.1	0.60	97.27	9/19/94	1530	0.2	9/19/94	1540	VOCs, SVOCs, metals, duplicate. Produced water well.
W-1	PZO	1.8-6.8	9/14/94	9/19/94	1013	4.16	--	--		9/21/94		0.1	9/21/94	1530	VOCs then dry. Return 9/22, 1/2 SVOC then dry.
W-2	EZ	3-10	9/15/94	--						9/20/94	1635	3 tubes	9/20/94	1640	VOCs, SVOCs, dry.
W-3	EZ	3-10	9/16/94	--						9/20/94	1650	3 tubes	9/20/94	1655	VOCs, SVOCs, metals.
W-4	PZO	1-6	9/15/94	9/19/94	924	4.45	100.45	0.81	85.19	9/20/94	1400	0.2	9/20/94	1410	VOCs, SVOCs, Metals, duplicate.
W-5	EZ	3-10	9/14/94	--						9/21/94	1540	3 tubes	9/21/94	1545	VOCs, 1/2 SVOC, dry. Return 9/22, 1/2 SVOC, dry. Return 1/4 metals dry.
W-6	PZO	2.8-7.8	9/15/94	9/19/94	929	3.96	98.18	0.68	83.54	9/20/94	845	0.1	9/20/94	847	1/2 SVOCs, dry. Return 9/22, 2 VOAs dry.
W-7	PZO	3.5-8.5	9/15/94	9/19/94	1000	6.24	99.63	0.92	92.47	9/21/94	1610	0.1	9/21/94	1610	1 VOA only, dry. Return, no addl water.

¹ft-bgs = feet below ground surface²measuring point elevation and water level elevation measured relative to internal datum

driven to ten feet (except 8 feet at EF-4) and the probe rods extracted to expose the perforated tubing. The annular space was filled with 10/20 silica sand, and sealed with bentonite at the surface.

5.3 Ground-Water Elevation Measurements

Ground-water elevations were measured in the 14 piezometers. Measurements were made 3 to 7 days following piezometer installation to allow the achievement of static ground-water elevation. The ground water elevations are presented with the completion and sampling information in Table 5-1. Depths to ground water were measured with an electronic water level probe. The measuring points of the piezometers, and the ground surface were surveyed (± 0.01 ft) by a registered land surveyor relative to an internal datum.

5.4 Ground-Water Sampling

Ground water was sampled using a peristaltic pump. Approximately three volumes of the water column were removed prior to sampling. The purge and sample information is presented in Table 5-1. In most cases, recharge of the sampling points was slow, and insufficient sample was obtained to perform all analyses, even after two or more sampling events. Two sampling points (EF-2 and 10-2) produced insufficient water for any analyses (Figure 5-1), but sampling efforts ensured that the full constituent list was analyzed in at least one sample in the vicinity of each solid waste management unit or area of concern.

Ground-water samples were generally collected in order of decreasing volatility: volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and inorganic constituents. Water analyzed for VOCs and SVOCs was pumped with minimal agitation. Water to be analyzed for VOCs was pumped directly into 40 mL VOA glass bottles and all headspace was eliminated. Water to be analyzed for inorganic constituents was pumped into a filtration chamber, and filtered with pressurized nitrogen into a 500 mL plastic bottle containing preservatives.

5.5 Ground-Water Sample Handling and Analysis

Ground-water samples were stored at 4°C in opaque coolers, and shipped via courier to the S-K Environmental Laboratory in Elk Grove Village, Illinois within 30 hours of sample collection. Copies of the completed chain-of-custody/sample analysis request forms are included in Appendix G.

Samples were analyzed for the constituents listed in Table 5-2. Two equipment blanks, two field blanks, and two field duplicates were also analyzed for all constituents.

5.6 Ground-Water Sampling Point Abandonment

After ground-water samples were collected, the sampling points were abandoned by pulling the polyethylene tubing or PVC casing from the ground and plugging the boreholes by pouring bentonite granules down the hole and hydrating in approximately two-foot lifts to the surface. All surfaces were repaired to grade. A concrete/asphalt patch was placed over sampling locations in areas where concrete/asphalt was present.

Table 5-2. Ground-Water Constituent List, RFI Phase I Release Assessment, Dalton Recycle Center.

Constituent	Method (from SW-846)	Method Detection Limit (mg/L)
<u>Inorganics</u> (DISSOLVED)		
Arsenic	7060	0.05
Barium	6010	2.0
Cadmium	6010	0.005
Chromium	6010	0.1
Lead	6010	0.0075
Mercury	7471	0.002
Selenium	7740	0.05
Silver	6010	0.05
<u>Organics</u> *		
Volatile Organic Compounds (37)	8240	0.005-0.100
Semi-Volatile Organic Compounds (62)	8270	0.33-3.3

* A complete list of organic compounds and method detection limits for individual compounds are given on the data sheets in Appendix G.

CHAPTER 6.0

SOIL INVESTIGATION RESULTS - DOLTON RECYCLE CENTER

This Chapter presents the results of the soil investigation at the Dolton Recycle Center, and includes all the soil data collected in the investigation of the SWMUs located south of 138th St. The soil investigation results from the Barker Chemical No. 2 area, located north of 138th St., are presented in Chapter 8.0.

The objectives of the Phase I RFI are to determine whether there has been a release or if there is the potential for a release of hazardous waste or hazardous constituents to soil or air from the SWMUs under investigation, and to evaluate the nature and degree of such a release. These objectives are addressed by the ambient air total organic vapor data presented in Section 6.2, and by the shallow soil data presented in Section 6.4. The objective of a Phase II investigation, should it be required, would be to determine the extent of releases to soil from the SWMUs under investigation. This objective is partially addressed by the deep soil quality data presented in Section 6.5. The data presented in Section 6.5 will be used to aid in the design of subsequent investigations.

6.1 Lithologic Conditions

The completed log-of-borehole forms are presented in Appendix E. The subsurface lithologies encountered during the Phase I were similar to those previously encountered at the site. In the northeast corner (EF-2), fill is absent and clay extends from ground surface to total investigated depth. At two locations (FF-1 in the former UST area and EF-4 in the former drum disposal area), excavation fill material (gravel, sand) was encountered to depths of approximately 8 feet below ground surface (ft-bgs). At all other locations, fill material consisting of medium-fine silty sand w/ occasional gravel and brick fragments was encountered at the surface to a depth of approximately 3 ft-bgs. Below the fill, to the total investigated depth of 20 feet, was a gray-brown silty clay with 5-10% sand and minor gravel. Based on previous soil investigation results from the site, the clay extends to a depth of approximately 45 ft-bgs. The previous lithologic descriptions of the site, including previously constructed cross-sections are presented in Chapter 3.0.

6.2 Air Total Organic Vapor Concentrations

Total organic vapor (TOV) concentrations were measured in the breathing space as part of the Health and Safety monitoring program specified in the Phase I RFI Workplan. These measurements are included with the field notes in Appendix D.

Elevated ambient air TOV concentrations were at or below background (< approximately 5 ppm for air) at all locations except at 10-1. Elevated ambient air TOV concentrations up to 20 ppm measured at this location were due to tank cleaning operations in the vicinity. The TOV concentrations measured in ambient air provide evidence that there are no releases of hazardous constituents to air from the target SWMUs.

6.3 Soil Quality- Field Screening Results

The field screening results are presented on Figure 6-1. Elevated Total Organic Vapor (TOV) concentrations [\geq 10 parts per million (ppm) for soil] were measured in soils at eight of the 25 locations (10-1, 10-2, D-1, EF-1, W-1, W-2, W-5, W-6) south of 138th Street. At all locations, TOV concentrations decreased rapidly with depth. At one location (10-1), a TOV concentration of 66 ppm was measured on soil from the 18-20 foot interval. TOV concentrations of soils in the 18-20 foot depth interval were below background (10 ppm) at all other locations.

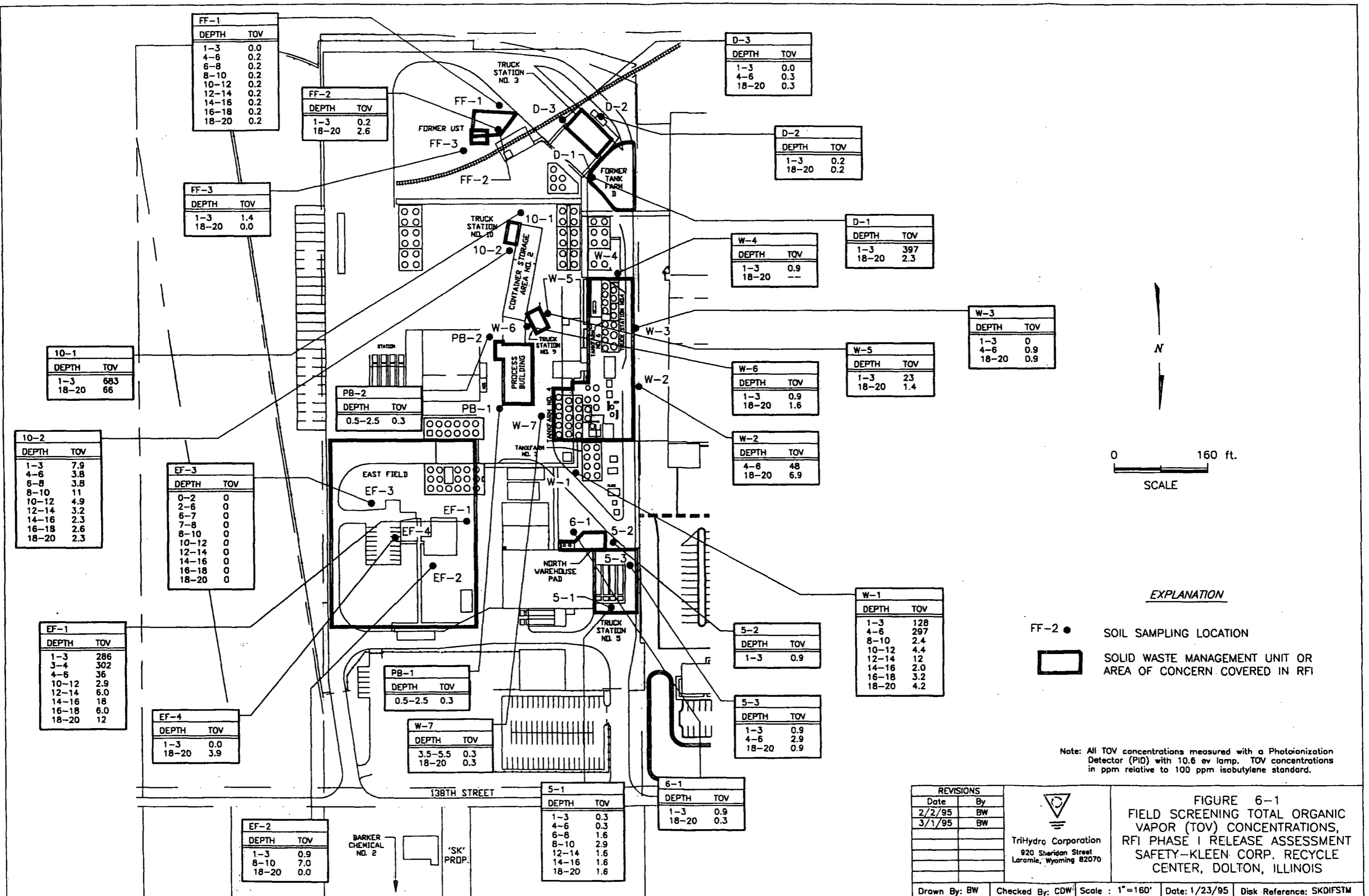
The TOV results provided a strong indication of the degree of volatile organic compounds (VOCs) in the soils. In 92 percent of the cases (D-2 and W-6 were the exceptions), total VOC concentrations were greater than 0.5 ppm in the shallow soils when TOV concentrations exceeded 10 ppm, and were less than 0.5 ppm when TOV concentrations were less than 10 ppm. Therefore, the TOV field screening was an effective tool for selecting the representative Phase I samples for laboratory analysis.

6.4 Soil Quality-Laboratory Results

Soil quality data for the Dolton Recycle Center are summarized on figures 6-2 to 6-5. A list of constituent abbreviations used on the figures is presented in Table 6-1. Laboratory data sheets, chain-of-custody forms, and summary data tables for the soil analytical data are presented in Appendix F. Raw data sheets and chromatograms are not included with this report, but are available on request.

The results of the quality assurance review of the soil analytical data are presented in Appendix B. Relatively few SVOC and TCLP metals data were indicated as "qualified" based on a review of the quality assurance data. However, the soil samples from the Dolton site presented a number of challenges for VOC analyses, due to the presence of matrix interferences. Sample dilution (5x) was required for many samples to achieve acceptable VOC quality control results. This dilution resulted in raising the VOC detection limits by a factor of five for most, but not all samples.

The soil VOC detection limits, although frequently elevated, were consistently below the USEPA proposed Subpart S levels for soils and consistently below the IEPA Class II levels for ground water. Therefore, the VOC data are useful for determining



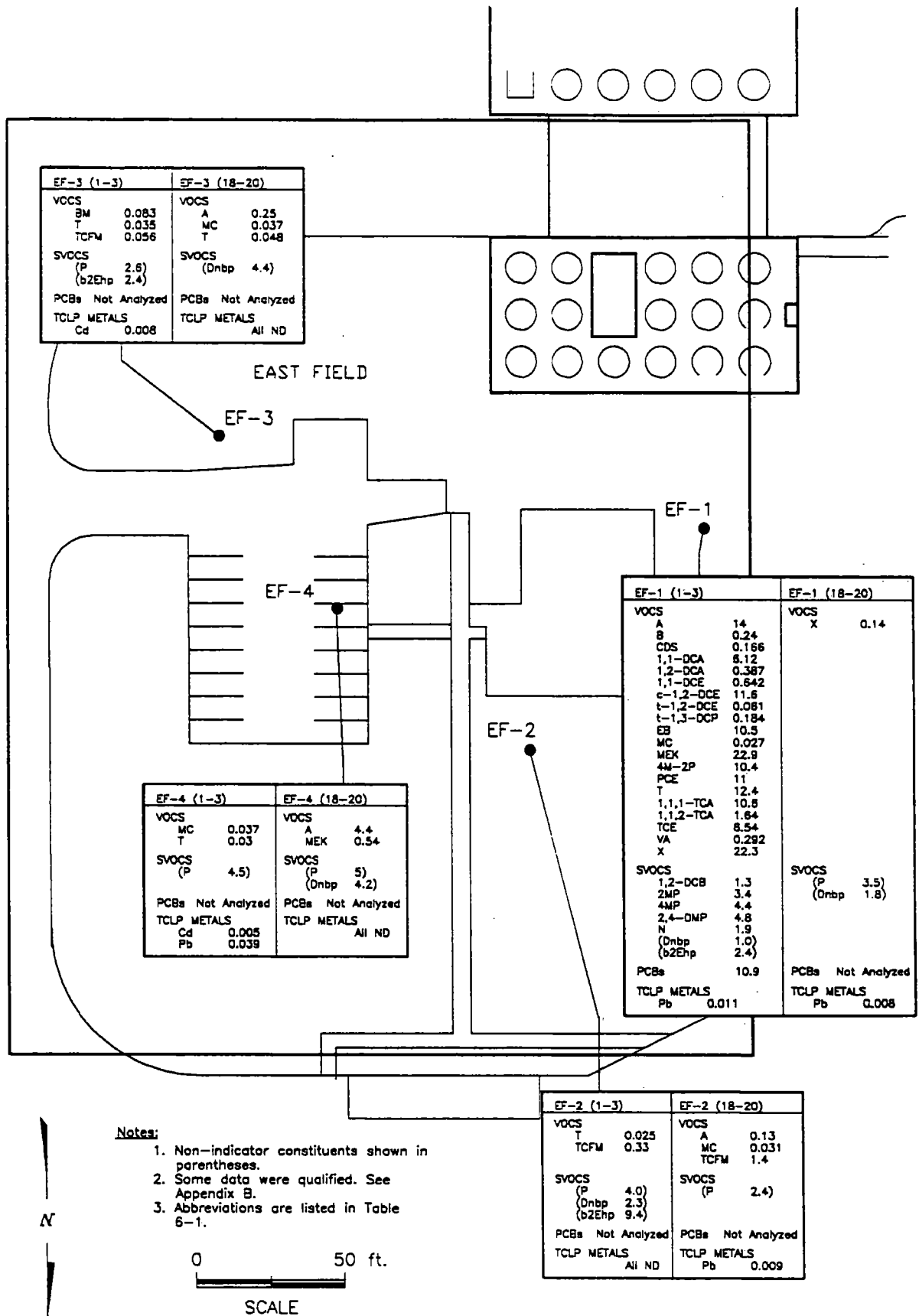


FIGURE 6-2 :SOIL QUALITY DATA, EAST FIELD, RFI PHASE I RELEASE ASSESSMENT, SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS

SKOIEISO

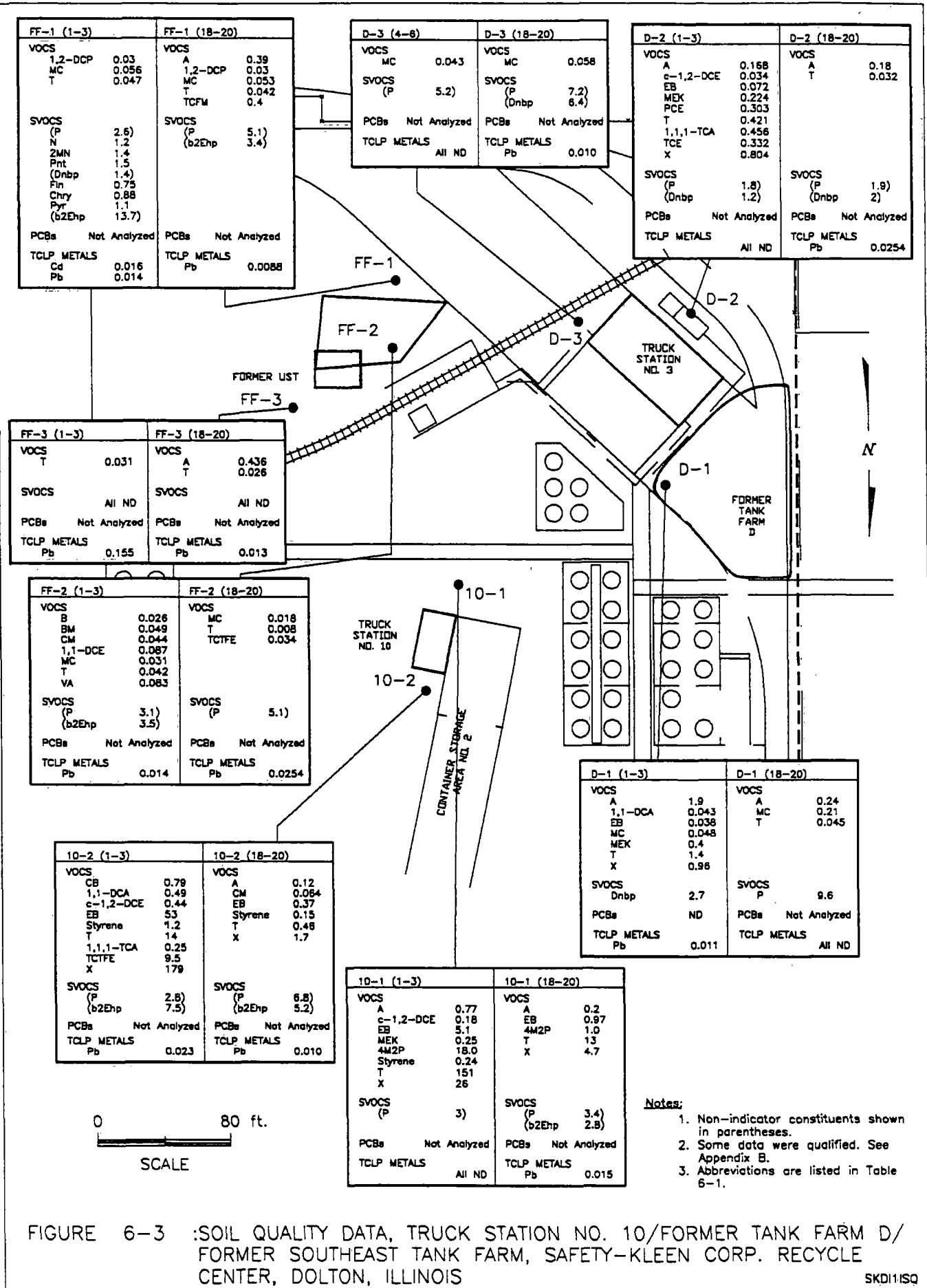


FIGURE 6-3 :SOIL QUALITY DATA, TRUCK STATION NO. 10/FORMER TANK FARM D/ FORMER SOUTHEAST TANK FARM, SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS

SKDI1/ISQ

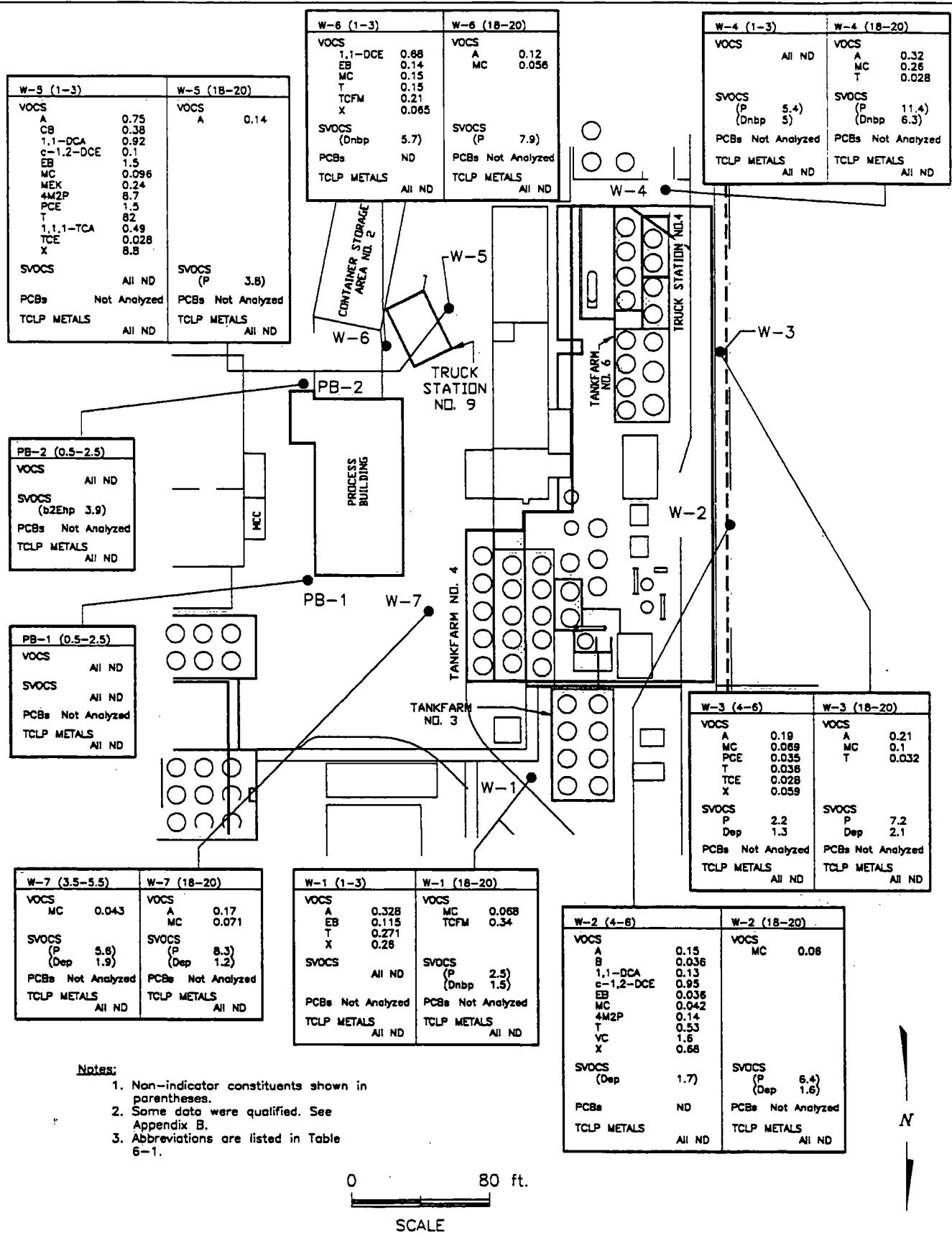


FIGURE 6-4 :SOIL QUALITY DATA, WEST TANK FARM, RFI PHASE I RELEASE ASSESSMENT, SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS

SKDIWISO

6-1 (1-3)		6-1 (18-20)	
VOCS		VOCS	
CB	0.037	A	0.15
T	0.11	1,1-DCE	0.04
		MC	0.061
		TCTFE	0.092
SVOCs		SVOCs	
(P	2.4)	(P	5.4)
(Dnbp	1.5)	(Dnbp	3.7)
PCBs Not Analyzed		PCBs Not Analyzed	
TCLP METALS		TCLP METALS	
All ND		All ND	

5-2 (1-3)		5-2 (18-20)	
VOCS		VOCS	
BM	0.094	A	0.12
CM	0.29	1,1-DCE	0.51
T	0.12	MC	0.12
		T	0.6
SVOCs		SVOCs	
(P	1.8)		All ND
PCBs Not Analyzed		PCBs Not Analyzed	
TCLP METALS		TCLP METALS	
All ND		All ND	

5-3 (4-8)		5-3 (18-20)	
VOCS		VOCS	
A	0.14	A	0.12
MC	0.05	T	0.037
T	0.036		
SVOCs		SVOCs	
(P	6)	(P	4.3)
(Dep	1.8)	(Dep	1.4)
PCBs Not Analyzed		PCBs Not Analyzed	
TCLP METALS		TCLP METALS	
All ND		All ND	

5-1 (1-3)		5-1 (18-20)	
VOCS		VOCS	
	All ND		All ND
SVOCs		SVOCs	
(P	4.5)	(P	5.9)
(Dnbp	2.2)	(Dnbp	3.8)
PCBs Not Analyzed		PCBs Not Analyzed	
TCLP METALS		TCLP METALS	
All ND		All ND	



Notes:

1. Non-indicator constituents shown in parentheses.
2. Some data were qualified. See Appendix B.
3. Abbreviations are listed in Table 6-1.

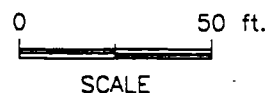


FIGURE 6-5 :SOIL QUALITY DATA, TRUCK STATION NO. 5/NORTH WAREHOUSE PAD, RFI PHASE I RELEASE ASSESSMENT, SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS

SKD1515Q

Table 6-1. List of Abbreviations for Constituents, RFI Phase I Release Assessment, Safety-Kleen Recycle Center, Dolton, Illinois.

Constituent	Symbol	Constituent	Symbol
<u>VOCs</u>		<u>SVOCs</u>	
Acetone	A	Phenol	P
Benzene	B	1,2-Dichlorobenzene	1,2-DCB
Bromo methane	BM	Isophorone	I
Carbon disulfide	CDS	Naphthalene	N
Chlorobenzene	CB	2-Methyl Napthalene	2-MN
Chloroethane	CE	2-Methylphenol	2-MP
Chloroform	CF	4-Methylphenol	4-MP
Chloromethane	CM	2,4-Dimethyl phenol	2,4-DMP
1,1-Dichloroethane	1,1-DCA	Phenanthrene	Pnt
1,2-Dichloroethane	1,2-DCA	Di-n-butyl phthalate	Dnbp
1,1-Dichloroethene	1,1-DCE	Fluoranthene	Fln
cis-1,2-Dichloroethene	c-1,2-DCE	bis(2-Ethylhexyl)phthalate	b2Ehp
trans-1,2-Dichloroethene	t-1,2-DCE	Diethyl phthalate	Dep
trans-1,3-Dichloropropene	t-1,3-DCP	Pyrene	Pyr
1,2-Dichloropropane	1,2-DCP	Butylbenzylphthalate	Bbp
Ethylbenzene	EB	Chrysene	Chry
2-Hexanone	2H	Benzo(k)fluoranthene	Bkf
Methylene Chloride	MC		
2-Butanone	MEK	<u>Metals</u>	
4-Methyl-2-Pentanone	4M2P	Arsenic	As
Styrene	Sty	Barium	Ba
Tetrachloroethene	PCE	Cadmium	Cd
Toluene	T	Chromium	Cr
1,1,1-Trichloroethane	1,1,1-TCA	Lead	Pb
1,1,2-Trichloroethane	1,1,2-TCA	Mercury	Hg
Trichloroethene	TCE	Selenium	Se
Trichlorofluoromethane	TCFM	Silver	Ag
1,1,2-Trichloro trifluoro ethane	TCTFE		
Vinyl Acetate	VA		
Vinyl Chloride	VC		
Xylenes (total)	X		

whether there have been releases from the SWMUs at the site, which is the objective of the Phase I RFI. These data are also of suitable quality for characterizing the nature of the releases, based upon the types of constituents present. The discussion of the data in this chapter focuses on the detection and nature of the releases to soils (the Phase I objectives).

6.4.1 SWMU Releases

Industrial operations have taken place historically and presently on properties adjacent to the S-K Dolton facility. Therefore, one of the challenges of the Phase I RFI was to distinguish between constituents that are indicative of possible releases from the facility solid waste management units (SWMUs) and those that are likely to be indicative of regional conditions not related to solid waste management practices at the site. To focus on the objectives of the RFI, S-K has identified "non-indicator constituents" that do not represent facility-related releases. Constituents assigned to the "non-indicator" group satisfy all of the following criteria:

1. The constituent is detected at every SWMU and in more than 50 percent of the shallow soils;
2. The constituent concentrations in shallow soils fall into a relatively narrow range; and
3. The constituents are present in shallow soil samples absent of the other constituents expected to be associated with releases.

Constituents which satisfy the "non-indicator" group criteria, and thus are not useful in achieving the Phase I release detection objectives, are phenol and phthalates. The other indicator constituents are used in the identification of a release from a facility SWMU, although their presence may be due to either facility or non-facility sources.

S-K collected and analyzed shallow soil samples to address the Phase I objective of determining whether a release had occurred from any of the SWMUs under investigation. Shallow soil samples were collected at a depth of one to three feet below ground surface (ft-bgs) at most locations at the Dolton Recycle Center. At some locations (PB-1, PB-2, D-3, W-2, W-3, W-7, and 5-3) the depths were slightly greater to allow collection of representative samples, as discussed in Chapter 4. The sampling depths are shown on figures 6-2 to 6-5. Based on the detection of the indicator constituents in shallow soils, possible SWMU releases to soil occurred at the following SWMU areas:

- The East Field. A release was detected at all four sampling sites (EF-1 through EF-4 on Figure 6-2). At EF-1, near where the drums were excavated during a sewer installation in 1988, the release included 21 VOCs, five indicator SVOCs, polychlorinated biphenyl compounds (PCBs), and lead. At the other three sites, where drums and impacted soils were excavated and removed by Barker Chemical in 1979, the release included four VOCs, cadmium and lead, but no indicator SVOCs.

Toluene was the only constituent detected at all four sampling sites; toluene concentrations were three orders of magnitude higher at EF-1 than at the other three sites.

- The Former Southeast Tank Farm. A release was detected at all three sampling sites (FF-1 through FF-3 on Figure 6-3). The release included five VOCs, six indicator SVOCs at FF-1 only, and lead. Toluene was the only constituent detected at all locations.
- Truck Station No. 10. A release was detected at both sampling locations (10-1 and 10-2 on Figure 6-3). The release included twelve VOCs and lead, but no indicator SVOCs. Cis-1,2-dichlorobenzene, ethylbenzene, styrene, toluene and xylenes were detected at both sites.
- The Former Tank Farm D and Truck Station No. 3. A release was detected at all three sampling sites (D-1 through D-3 on Figure 6-3). The release included twelve VOCs and lead, but no indicator SVOCs. Acetone was the only constituent detected at all three sites; acetone concentrations decreased with distance from former Tank Farm D. Based on this pattern, the release is related to former Tank Farm D, and not to Truck Station No. 3.
- West Tank Farm, Truck Station No. 9, and the Process Building. A release was detected at six of the nine sampling sites (Figure 6-4). Those sites where a release was not detected were W-4 south of Truck Station No. 4 and the two sites (PB-1 and PB-2) located north and east of the Process Building. Releases similar in nature have occurred in the vicinity of the process units and three tank farms in the West Tank Farm (W-1 through W-3 and W-7) and in the vicinity of Truck Station No. 9 (W-5 and W-6). The releases included thirteen VOCs, but no indicator SVOCs or metals. Commonly detected constituents in this area are acetone, ethylbenzene, methylene chloride, toluene and xylenes.
- North Warehouse Pad and Truck Station No. 5. A release was detected at the three locations near the pad (5-2, 5-3 and 6-1 on Figure 6-5), but not at the one site (5-1) associated with the truck station. The release included six VOCs, but no indicator SVOCs or metals. Toluene was detected at the three sites near the north warehouse pad; toluene concentrations decreased with distance from the pad.

In summary, no releases have occurred to soils or air from the Process Building, and Truck Stations Nos. 3, 4, and 5. Releases to soils (but not air) were detected at all sampling locations in the vicinity of the East Field, the former Southeast Tank Farm, Truck Stations Nos. 9 and 10, process units and storage tanks in the West Tank Farm, and the North Warehouse Pad. The pattern of releases is consistent with the record of past releases listed in the RFI Workplan, and with the results from investigations done prior to S-K operations at the facility (reference Chapter 3).

The releases include VOCs, indicator SVOCs, lead and cadmium in the East Field, and all of these except cadmium in the former Southeast Tank Farm. In the southwest part of the area (Truck Station 10 and Former Tank Farm D), the releases include VOCs and lead, but not the indicator SVOCs. In the northwest part of the area (West Tank Farm process area and tanks, Truck Station No. 9 and the North Warehouse Pad), the release included only VOCs. These results will be used to design the additional soil sampling efforts during Phase II.

6.4.2 Vertical Extent of Soil Degradation

S-K voluntarily collected deep soil samples to evaluate the vertical extent of soil impacts. The deep soil quality data are presented on figures 6-2 to 6-5 and summarized in data tables in Appendix F. These data will be used to aid in the design of subsequent investigations. Deep soil samples were collected at a depth of 18 to 20 ft-bgs from 23 locations at the Dolton Recycle Center. Deep soil samples were not collected at PB-1 and PB-2.

At every SWMU where a release was detected in the shallow soils (East Field, former Southeast Tank Farm, Truck Station 10, former Tank Farm D, West Tank Farm/Truck Station No. 9 and the North Warehouse Pad), some constituents in the shallow release were also detected in the deeper samples. VOCs were present in every deep soil sample from a release area. Lead was present in deep soil samples at every release area where it was present in the shallow soils, and not present in the deep soil samples at the West Tank Farm/Truck Station No. 9 and North Warehouse Pad in the northwest part of the area, where lead was not present in the shallow soils. The indicator SVOCs and cadmium, which were present in some release areas, were not detected in any deep soil sample collected from the facility.

Two of the VOCs (acetone and toluene) were detected in at least one deep sample in every release area, and methylene chloride was detected in every deep sample in every release area except at Truck Station No. 10. Freons (trichlorofluoromethane and 1,1,2-Trichlorotrifluoroethane) were detected at depth except in the southwest corner (Truck Station No. 10 and Former Tank Farm D). A few additional VOCs were detected at depth in the East Field (2-butanone or MEK and xylenes), former Southeast Tank Farm (1,2-dichloropropane), North Warehouse Pad (1,1-dichloroethane), and Truck Station No. 10 (chloromethane, ethylbenzene, 4-methyl-2-pentanone or MIBK, styrene and xylenes).

With respect to the two non-indicator VOCs (phenol and phthalates), their detection was common in the deeper samples: 20 of 23 deep samples for phenol and 16 of 23 deep samples for phthalates. They were present in the deep sample at Truck Station No. 5 (Sample 5-1), where no release was detected in the deep sample. Phenol concentrations in the deep samples appeared to be slightly higher in the west part of the facility, and there was no pattern in phthalate concentrations in the deep samples. The data from the deep samples for these two constituents reinforce the conclusion of the data from the shallow samples; the presence of phenol and phthalates in the soils at the facility are not related to releases (past or present) from the facility.

CHAPTER 7.0

GROUND-WATER INVESTIGATION RESULTS

This Chapter presents the results of the ground-water investigation at the Dolton Recycle Center, and includes all the ground-water data collected in the investigation of the SWMUs located south of 138th St. These data will be used to assist in the design of the Phase III investigation at the site. The objective of the Phase III investigation is to determine the extent of impacts to ground water of any releases of hazardous constituents from the SWMUs under investigation in Phase I.

7.1 Ground-Water Occurrence and Flow

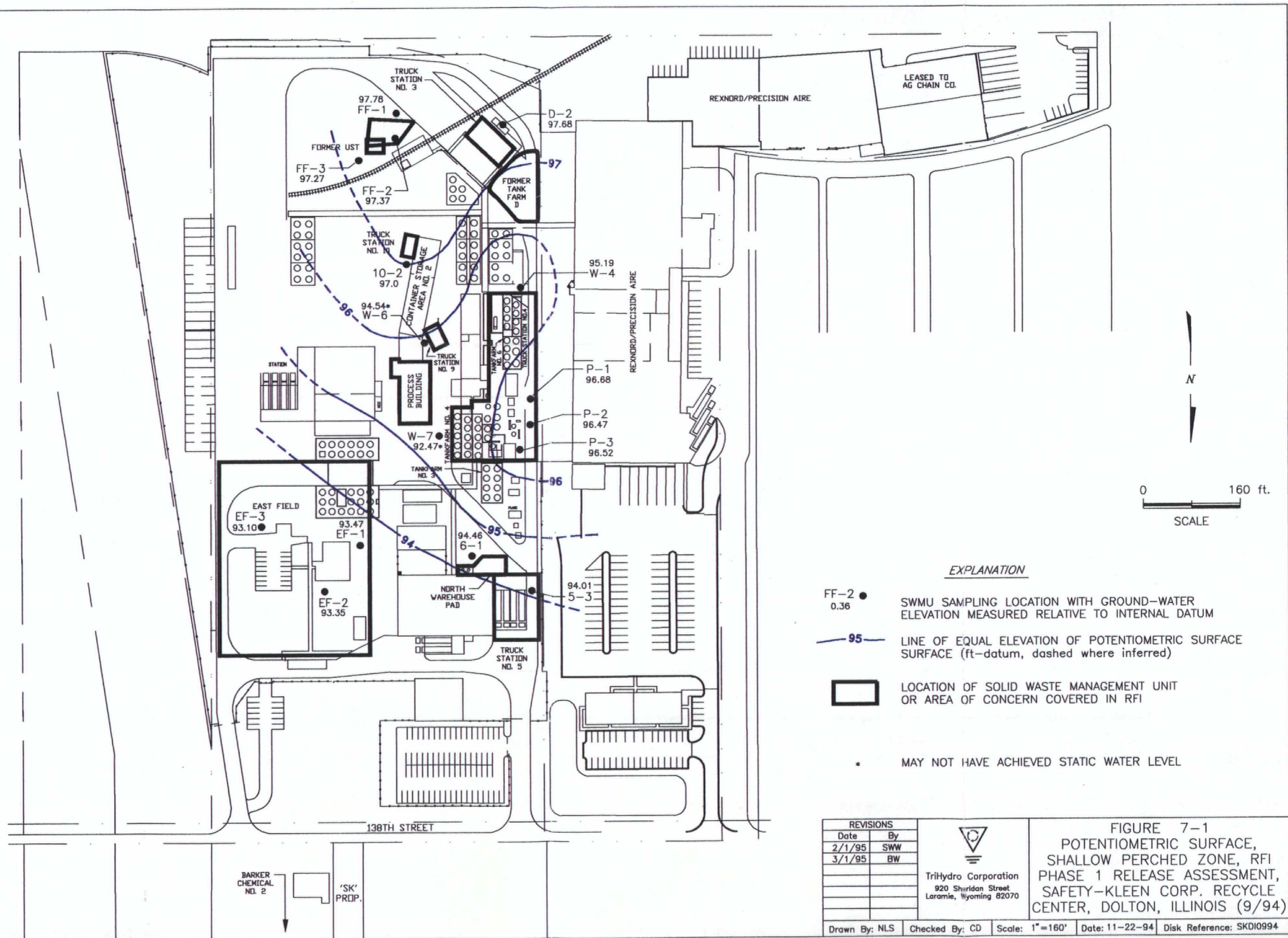
Ground water was encountered at depths of 4 to 5 feet below ground surface (ft-bgs), except for about 2 ft-bgs in low permeability sediments in the vicinity of Container Storage Area No. 2. This perched zone extends to 10-15 ft-bgs as shown on the borehole logs (Appendix E).

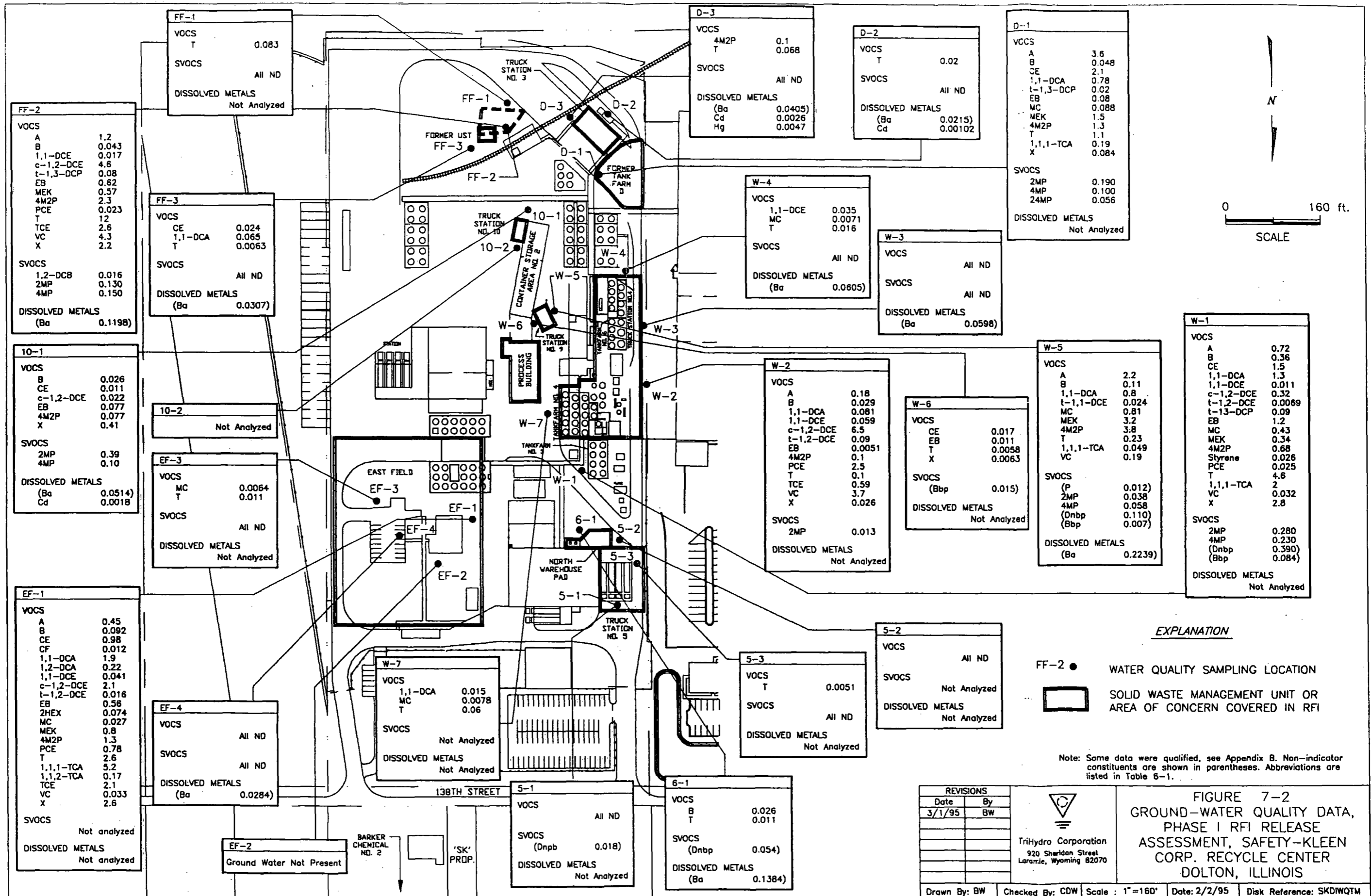
The potentiometric surface is detailed on Figure 7-1. Water levels were allowed to equilibrate for a minimum of 3 days. (Based on the apparently anomalous low elevations, water levels at two locations [W-6 and W-7] may not indicate static conditions. These data were not used in constructing the potentiometric surface.) Ground-water flow is generally to the northeast across the site. This result is consistent with the results of previous ground-water investigations at the site. In the vicinity of location W-4, a subtle ground water trench continues to be present at SK-6. The trough is shown in the vicinity of SK-6 on the 1988 potentiometric surface map (Figure 3-8).

The 1994 potentiometric surface map is consistent with the qualitative permeability data listed in Table 5-1 under "Sampling Comments". Permeability was relatively good (the total volume necessary for sample collection could be collected at one time) in the northern part of the site (D-2, D-3, FF-2 and FF-3), in the trough ((W-3 and W-4), and in the relatively coarse excavation fill at EF-4 in the East Field. In the other areas, permeability is relatively low (total volume for sampling could not be collected at one time). On Figure 7-1, contours are relatively far apart in the higher permeability areas, and relatively close in the lower permeability areas.

7.2 Ground-Water Quality Data

The ground-water quality data are presented on Figure 7-2 and in the summary data tables in Appendix G. Laboratory data sheets for the ground-water analyses,





including quality control data, are included in Appendix G. The raw data sheets and chromatograms are not included in Appendix G, but are available upon request. An analysis of data quality is presented in the Quality Assurance Report in Appendix B.

Ground water was sampled at 21 locations at the Dolton Recycle Center. In many cases, insufficient sample was obtained to perform all analyses. Two sampling points (EF-2 and 10-2) produced insufficient water for any analyses. This difficulty is attributed to the low permeability of the clay underlying the site (see Section 3.2). Sampling efforts ensured that the full constituent list was analyzed in at least one sample in the vicinity of each area of concern.

Ground-water quality is the focus of the limited Phase III RCRA Facility Investigation to be conducted at the facility. However, several patterns are apparent in the ground-water quality data collected during the Phase I investigation. These patterns will be investigated further during Phase III, and include:

- Volatile organic compounds (VOCs) are present in the shallow ground water at all SWMUs where releases were identified based on the Phase I shallow soil data.
- Indicator semi-volatile organic compounds (SVOCs) are present in shallow ground water at all SWMUs where releases were identified based on the Phase I shallow soil data, except at the North Warehouse Pad, where indicator SVOCs were not present in the shallow soils, and at the East Field, where there was insufficient water to collect a sample for SVOC analysis at the site (EF-1) with the highest SVOC concentrations in the shallow soil.
- Cadmium (D-2, D-3 and 10-1) and mercury (D-3) are present at low concentrations in the southwest corner of the facility. Lead, which was present in shallow and deep soils at several SWMUs, was not detected in the ground water. Barium is present at many ground-water sampling locations, but was not detected in any soil sample; therefore, the presence of barium in ground water appears not to be related to releases from SWMUs.
- At the most down-gradient locations (EF-3, EF-4 and 5-1 to the north and W-3 and W-4 in the ground-water trough), concentrations of facility-related constituents are below detection limits except for low concentrations (0.006 to 0.016 mg/L) of methylene chloride and toluene at EF-3 and W-4 and of 1,1-dichloroethene at W-4. It is important to note that the most down-gradient monitoring locations in Phase I are more than 200 feet up-gradient of the S-K property boundaries.

CHAPTER 8.0

BARKER CHEMICAL NO. 2 AREA RESULTS

The Barker Chemical No. 2 area is part of a 50-foot wide strip that extends northward from 138th Street to the Little Calumet River (Figure 8-1). The former owner intended to install a pipeline in the strip to deliver materials between the plant and barges on the canal. Safety-Kleen has not installed the pipeline, nor conducted any industrial or waste management activities in the strip of property.

Illinois Environmental Protection Agency (IEPA) files indicated that previous owners of the property may have conducted waste disposal activities. Therefore, IEPA requested an investigation to determine if hazardous constituents had been released from a solid waste management unit (SWMU) located in the strip. Safety-Kleen presents the results of the Phase I investigation in the property strip in this chapter. The investigation of the Barker Chemical No. 2 area is discussed in a separate chapter of this report because of its distance from the plant and the other SWMUs under investigation.

8.1 Visual Site Investigation

The RFI investigation at the Barker Chemical No. 2 area focused on an area which appeared to be "disturbed" on a 1980 aerial photograph (attached as Figure 8-1). The area is currently bounded on the east by a water filled pit (which is not on Safety-Kleen property), shown on Figure 8-2. Prior to the environmental investigation, a licensed land surveyor was contracted to locate the boundaries of Safety-Kleen property in the vicinity of the "disturbed area." Survey markers were located at points 1 through 5 as shown on Figure 8-1.

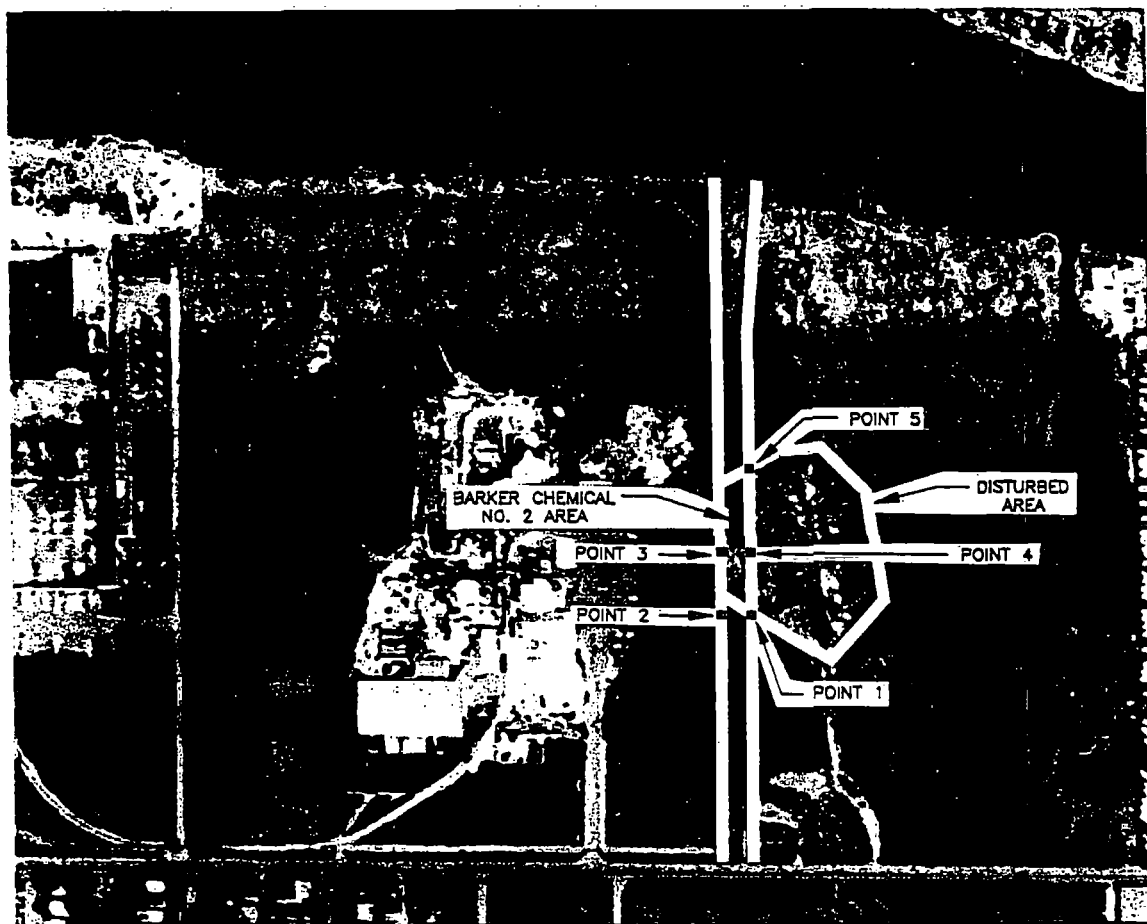
During the visual site inspection, partially exposed drums were discovered in the "disturbed area" shown on the 1980 aerial photograph (Figure 8-1). TriHydro Corporation notified Safety-Kleen of the drum discovery in a telephone conversation on September 12, 1994. Jack Bedessem of TriHydro Corporation notified IEPA of the drum discovery in a telephone conversation on September 17, 1994. The drum discovery was also noted in the quarterly RFI report submitted to IEPA on October 14, 1994.

Field notes and physical descriptions generated from a visual site investigation are presented on Figure 8-3. The northern section of the Barker Chemical No. 2 area contains dense brush that corresponds with the darker section on the 1980 aerial photograph on Figure 8-1 (between survey points 3,4 and 5). There is no evidence of disturbance or debris in this section. In addition, there are some large trees in this section, and their presence implies no disturbance of the land that might indicate disposal activities. Therefore, the investigation focused on the southern section on the



1987

FIGURE 8-2 :BARKER CHEMICAL NO. 2 AREA (1987 Aerial Photo)



1980

FIGURE 8-1 LOCATION MAP, BARKER CHEMICAL NO. 2
AREA (April 1980 Aerial Photo)

aerial photograph on Figure 8-2. The southern section is bordered by the large, water-filled pit, located immediately east of the Safety-Kleen property.

The southern section is characterized by the presence of small cottonwoods, areas of low weeds (notably goldenrod) similar to those present in the open field to the east, and areas of hummocky ground and rock rubble (Figure 8-3). Areas of hummocky ground are approximately one to three feet higher than the surrounding terrain. Partially exposed crushed drums are present throughout the "disturbed areas." Bricks, concrete fragments, and other debris are also present. These "disturbed areas" are characterized by the presence of light gray clay at the surface. Brown soil, rich in humic material, is present at the surface in the undisturbed areas. The perimeter of the "disturbed areas" contains taller old growth cottonwoods and some piled deadfall. Immediately adjacent on the east side of the southern section is a water-filled pit covered by duckweed. The pit extends up to the property boundary. At the north end of the pit, there is a high spoils pile with crushed drums visible in the bank.

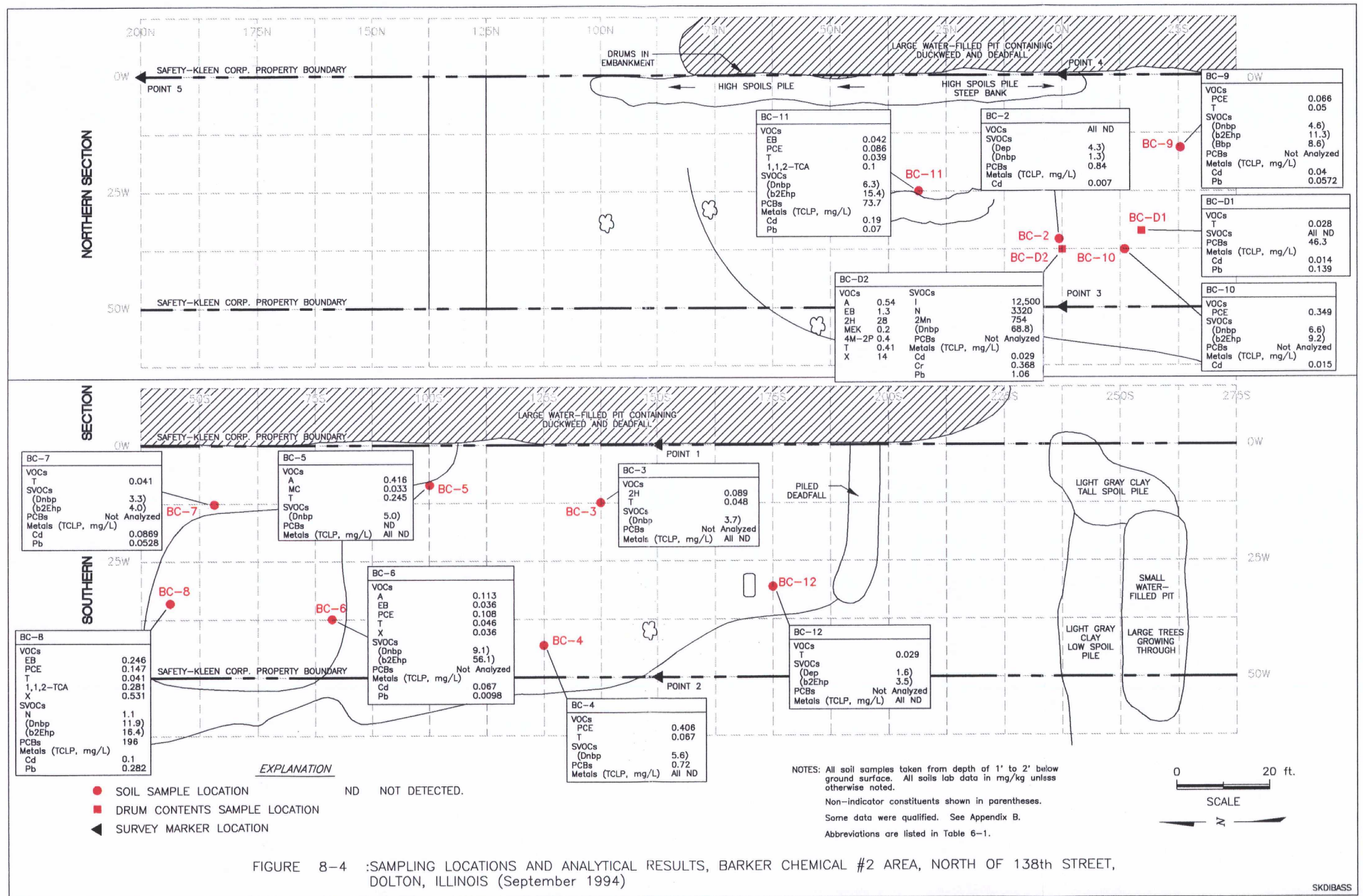
8.2 Soil Gas Survey Results

The RFI Workplan amended by Condition 6 of the Agency approval letter described a Phase I release assessment in the "disturbed area" which included a shallow soil gas survey and soil sampling at two locations. The soil gas sampling locations and results are shown on Figure 8-3. Soil gas sampling locations were selected to provide adequate coverage of the area, and to sample in the vicinity of partially exposed drums. Some areas were inaccessible due to dense underbrush. Total organic vapor concentrations were at or below ambient background levels (< 5 ppm) at all locations. Therefore, the soil gas survey provided no evidence of soil impacts at the site.

8.3 Shallow Soil Quality Analytical Results

The soils analytical data are summarized on Figure 8-4. Laboratory data sheets, chain-of-custody forms, and soil quality data summary tables for the samples from the Barker Chemical site are included in Appendix F.

The laboratory data indicate a release from the SWMU to soils. The release is characterized by volatile organic compounds (VOCs) (acetone, ethylbenzene, 2-hexanone, methylene chloride, tetrachloroethene, and 1,1,2-trichloroethane) at concentrations of 0.5 ppm or less, PCBs, and TCLP lead and cadmium. The low VOC concentrations indicated no potential for release of hazardous constituents to air at significant levels. No semi-volatile organic compounds indicative of a release were detected. As discussed in the previous chapter, there is no evidence that phthalates are related to any release at the facility.



The concentrations were highest in the middle of the disturbed area near where the buried drums were evident. The southernmost location (BC-12) was in an area where the soil appeared to be native material. The only facility-related constituent detected in this sample was toluene (0.029 mg/kg). Therefore, the extent of soil impacts may be defined on the southern end of the property by location BC-12. The lateral extent of the release to the north has not been defined. The lateral extent to the east and west are defined by the S-K property boundary, though the impacts presumably extend beyond the boundaries. The vertical extent of soil impacts and maximum drum burial depths have not been determined. These will be addressed in Phase II. The proposed Phase II activities are presented in Chapter 9.0

8.4 Drum Content Analytical Results

The contents of two crushed drums were also sampled. The drum samples are designated BC-D1 and BC-D2 on Figure 8-4. Drum contents samples were collected and handled in the same manner as the soil samples. Sample BC-D1 was described in the field as "black crumbly material, hard, brittle, dry, and sooty with abundant rust and scale." Sample BC-D2 was described in the field as "white paint-like material, moist, spongy, firm/stiff, elastic, and slightly sticky." The drum samples were analyzed for the same constituents as the soil samples. In addition, sample BC-D1 was analyzed for PCBs.

Target constituents were detected in both drum samples. Toluene, cadmium and lead and PCBs were detected in BC-D1. Several VOCs (acetone, ethylbenzene, 2-hexanone, 2-butanone, 4-methyl-2-pentanone, toluene, and xylenes), SVOCs and cadmium were detected in BC-D2. Isophorone (12,500 ppm) and naphthalene (3320 ppm) were the predominant constituents detected in BC-D2.

CHAPTER 9.0

FUTURE ACTIVITIES

According to the Part B permit for the Dolton Recycle Center Condition 14 of the RFI Workplan approval letter, dated August 30, 1994, Safety-Kleen (S-K) understands that the Illinois Environmental Protection Agency (IEPA) will review the data presented in this report and determine whether a release has occurred from the solid waste management units (SWMUs) under investigation.

Per Condition 22 of the IEPA letter dated August 30, 1994, quarterly progress reports must be submitted to the Agency until the final Phase I Report is submitted. S-K considers the Phase I activities to be complete with the submission of this final Phase I Report, and therefore no further quarterly reports will be submitted.

Upon receipt from IEPA of notification that the Agency considers that a release has occurred from one or more of the SWMUs under investigation, S-K will respond as directed.

Per the IEPA letter dated March 8, 1994, S-K intends to submit a summary of available information on historic waste management activities at the Rexnord/Precision Aire and Agri-Chain Sites on or before December 31, 1997.

CHAPTER 10.0

REFERENCES

ATEC Associates, January 13, 1989. Report, Hydrogeologic Assessment, Safety-Kleen Facility, Dolton, Illinois.

Boerngen, J.G., and Shacklette, H.T., 1981. Chemical Analysis of Soils and Other Surficial Materials of the Conterminous United States. USGS Open File 81-197.

Groundwater Technology, Inc., February 1, 1991. Underground Storage Tank Removal, Safety-Kleen Corp. Dolton Recycle Facility, 13943 Park Avenue, Dolton, Illinois.

TriHydro Corporation, March 4, 1994. RCRA Facility Investigation Phase I Release Assessment Workplan, Safety-Kleen Corp. Recycle Center, Dolton, Illinois (ILD 980613913).

U.S. Environmental Protection Agency, 1987. Test Methods for Evaluating Solid Waste, Revision 1 (SW-846).

Wang Engineering, Inc., January 19, 1990. Letter Report, Potential Remedial Costs, Precisionaire Property, Dolton, Illinois.

APPENDIX A

RELEVANT CORRESPONDENCES WITH THE
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA)



State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
217/524-3300

2200 Churchill Road, Springfield, IL 62794-9276

August 30, 1994

Mr. Scott Davies
Safety-Kleen Envirosystems
1000 N. Randall Road
Elgin, Illinois 60123-7857

Re: 0310690006 -- Cook County
Safety-Kleen Envirosystems
ILD980613913
Date Received: March 7, 1994
Log No. B-120-CA 1

Dear Mr. Davies:

The RCRA Facility Investigation (RFI) Phase I Workplan for the above-referenced facility submitted by Safety-Kleen Envirosystems has been reviewed by this Agency. This workplan was submitted in accordance with Condition IV.B.2 of the RCRA Part B permit issued for the above-referenced facility (Log No. B-120) on September 29, 1993. The workplan is hereby approved subject to the following conditions and modifications:

1. This RFI Phase I Workplan shall be carried out to investigate for possible releases from the following solid waste management units (SWMUs):

<u>SWMU NO.</u>	<u>NAME</u>
1	Process Area
2	West Tank Farm Area (including Tank Farms #3, 4, 5 and 6 and Process Areas)
3	Former Southeast Tank Farm Area
4	East Field
5	Truck Stations #3, 4, 5, 6, 9 & 10
6	Driveway to Facility
7	Newly Sited Areas:
	a. Former Barker Chemical Property
	b. Former Rexnord/Precision Aire Property
	c. Agri-chain Property

As stated in Condition IV.A.1 of the RCRA Part B Permit issued for the Safety-Kleen/Dollon facility, the purpose of the required Phase I investigation is to demonstrate whether or not hazardous wastes or hazardous constituents have been released from the SWMUs identified above. Therefore, the review of this RFI Phase I Workplan was conducted with this goal in mind.

Page 2

2. RFI Phase I activities be completed by February 1, 1995. When Phase I is complete, the owner or operator must submit to the Agency certification both by a responsible officer of the owner or operator and by an independent registered professional engineer that the facility completed Phase I in accordance with the specifications in the approved RFI Phase I workplan. In addition, a certification statement meeting the requirements of 35 IAC 702.126 must be provided by a responsible officer of the laboratory which conducted the chemical analyses that the requirements of this letter were met during the chemical analyses of all samples. This certification must address the applicable sample collection, preservation, handling preparation and analytical requirements set forth in this letter. These certifications must be received at this Agency after completing Phase I, or by eight months for certification March 3, 1995. These dates may be extended if Safety-Kleen submits information to the Agency indicating that it is attempting to complete the required activities in a timely manner but needs additional time to complete the investigation.

The attached certification forms must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the RFI. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity.

The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5105 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Section 1). Therefore, any certification or engineering services which are performed for a RFI workplan in the State of Illinois must be done by an Illinois P.E.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, Section 13.1 of the Illinois Professional Engineering Act.

As part of the certification, to document the RFI Phase I activities at your facility, please submit a Phase I Report and Summary which includes, at a minimum:

- a. The information identified in Condition 29 below regarding the required soil sampling/analysis effort at each SHMU where such an investigation is necessary;
- b. Information which the workplan indicates will be in the report;
- c. A chronological summary of Phase I activities and the cost involved.

Page 3

- d. Color photo documentation of Phase I activities;
- e. A description of the qualifications of personnel performing and directing the RFI activities including contractor personnel; and
- f. A general discussion of the activities which should be carried out as part of Phase 2 of the RCRA Facility Investigation.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Division of Land Pollution Control -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

- 3. If the Agency determines that implementation of this RFI Workplan fails to satisfy the requirements of Section IV of the RCRA Part B Permit (Log No. 8-120), the Agency reserves the right to require that additional work be completed to satisfy these requirements. Revisions of RFI Workplans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.

- 4. The Agency cannot accept the proposed recommendation of no further investigation of the Process Area located within the South Warehouse Building, based on the results of a previous integrity evaluation. It was noted that the primary objective of the integrity inspection conducted by the registered professional engineer was to assess the existing integrity of the pavement and secondary containment structures relative to preventing migration of releases to underlying and/or surrounding soils. As such, the certification does not provide an evaluation of the potential for any past migration through the pavement or secondary containment structures.

Information regarding environmental investigations in the area of the Process Building indicate some contamination is likely present beneath and/or around the building. Samples collected from the borehole designated as 1979-2 indicated gasoline odors at the 2.5 and 5 foot depth interval (no mention of chemical odors were noted from the samples collected from the deeper intervals). Releases of hazardous wastes/hazardous constituents within the secondary containment system of the South Warehouse are documented. It is also stated within the subject submittal that minimal information regarding operations within the building is available for operations within the building prior to 1987. Therefore, it is possible that releases within the building occurred prior to 1987.

Page 4

As such, the issue of whether the pavement and secondary containment system were adequate at that time is the issue; one which cannot be evaluated now. The integrity evaluation presented within the subject submittal did not demonstrate conclusively that the pavement and containment system of the Process Area have been impermeable over the entire operating life of the structure. Therefore, in order to determine whether the secondary containment system of the Process Area prevented migration of hazardous wastes/hazardous constituents, limited sampling/analysis should be conducted around the perimeter of the building. A minimum of four borings shall be performed around the perimeter of the Process Area building, with soil samples collected from the 6-12 and 18-24 inch depth interval. Boring locations shall be biased towards locations where released materials may be present, such as locations near deteriorated area of the containment system, low lying areas, and stained areas. All soil samples collected must be analyzed for volatile organics in accordance with the analytical method outlined in Condition 11. The results of this investigation must be included in the RPI Phase I report required by Condition 22 below.

5. Should the proposed environmental investigations in the area of the West Tank Farm include coring through the secondary containment system then the corings must be properly sealed to ensure the requirements of 35 IAC 724, Subpart J are met. After the corings are sealed, an integrity evaluation, in accordance with the procedures outlined below, must be conducted after the proposed sampling/analysis activities have been completed for the West Tank Farm area.

The integrity evaluation should be conducted as follows:

An independent registered professional engineer shall inspect the integrity of the concrete surfaces. These surfaces shall be inspected for cracks which penetrate through the concrete/asphalt. In addition, all construction joints must be inspected to ensure that they are watertight. This inspection must be carried out in accordance with the standards and recommendations of professional/technical entities such as the American Concrete Institute, the Portland Cement Association, the American Society for Testing and Materials, the American Society of Civil Engineers, etc., which relate to the ability of the concrete/asphalt to contain liquids. The results of this inspection shall be submitted in the form of a report. The report must include (1) a discussion of the procedures used to conduct the inspection, including reference to the standards/recommended procedure used, (2) the results of the inspection, (3) scaled drawings showing the location of all cracks and construction joints observed during the investigation, (4) conclusions reached regarding any cracks or construction joints observed in the areas of concern, (5) justification for the conclusions reached (e.g., information must be provided which indicates that any construction joints in the areas are indeed watertight), and (6) photographs to support the conclusions reached.

Page 5

Additionally, if environmental investigations include coring through the concrete/asphalt surfaces of the tank farm, Safety-Kleen should provide diking around the cored area until the surfaces have been adequately sealed. This diking is necessary to minimize the potential for any release of hazardous waste/hazardous constituents into the underlying soils while this investigation is being conducted.

6. A review of Agency files indicates disposal activities may have taken place on the Barker Chemical site located north of the Safety-Kleen facility on 138th Street. A June 20, 1985 report by Ecology and Environment states that solvent contaminated still bottoms were dumped directly onto the ground, and numerous containers holding wastes were observed to be leaking during IEPA and USEPA inspection. Since it appears that waste disposal practices may have been conducted at this site, the proposed environmental investigations should be expanded in an effort to demonstrate that no contamination is present on the property now owned by Safety-Kleen. To demonstrate that no contamination exists, the Permittee shall conduct a soil gas survey of the soils in this area. The soil gas sample locations shall be based on a sampling grid with a sample interval of no greater than 40 feet. Soil samples shall be collected at locations where soil gas concentrations exceed background levels. Should the soil gas survey indicate no evident impact to the soils from suspected operations, a minimum of two soil samples shall be collected from the "disturbed area" at shallow intervals, and analyzed in accordance with Condition 11 below. Should the results of such investigations indicate no environmental impacts, then the Barker Chemical property will not be considered a SWMU of concern, and no additional RFI investigations will be required for this area.
7. The proposed analytical parameter list proposed in the subject submittal appears adequate to detect most of the parameters which were managed at the facility. However, since little information is known regarding the types or volumes of wastes managed at the facility while under Barker Chemical operation, the possibility of parameters outside the list proposed in the submittal is possible. One of the Agency's concerns is the potential for mismanagement/releases of waste oils containing PCBs at the site. Therefore, soil samples collected from the borings designated as EF-1, W-2, W 6, D-1 and one boring from the Barker Chemical property for laboratory analysis must be analyzed for PCBs in accordance with SW-846 Method 8080. Should the Phase I investigation results indicate that PCBs are not constituents of concern at this facility, the requirement for analysis for these parameters will be dropped from the Phase II assessment.
8. In the event that soil conditions do not allow complete recovery in accordance with Attachment 7, Safety-Kleen must conduct sampling in a manner to minimize volatilization of organic compounds. Such procedures should include minimization of disturbance of the sample (i.e., no mixing, no compositing, no aeration), minimal handling of the samples between collection and preservation, and adequate preservation of the samples (e.g., no headspace, storage of the samples on ice).

Page 6

9. All Quality Assurance/Quality Control (QA/QC) procedures must be conducted in accordance with those as outlined in SW-846, Chapters 1 and 2. The use of these standardized procedures for QA/QC will allow a standardized review of the analytical data. All preservation and handling, including chain of custody, of the samples shall be conducted in accordance with the appropriate procedures outlined in SW-846, Chapter 2, and any required procedures outlined in the specific sample analytical method.
10. In accordance with an agreement between Safety-Kleen and Agency representatives, background sampling and analysis, if necessary, will be deferred until after submittal of the RFI Phase I report.
11. Since the results of the photoionization unit analysis will be useful in determination of the extent of contamination within each of the boreholes, the Agency requires that Safety-Kleen provide the Agency with a report detailing the results of the photoionization unit analysis in tabular form. This report should include at a minimum: 1) documentation that the unit was operated in accordance with the manufacturer's specifications, 2) a description of the calibration procedures used as part of each investigation effort, 3) analysis procedures, and 4) a summary of the analytical results by depth and by borehole. This information should be presented in the RFI Phase I Report.
12. All soil samples shall be analyzed individually (i.e., no compositing). Analytical procedures shall be conducted in accordance with Test Methods for Evaluating Solid Wastes, Third Edition (SW-846). When a SW-846 (Third Edition) analytical method for organic analytes is specified, all the organic chemicals listed in the Quantitation Limits Table for that method shall be reported unless specifically exempted in writing by the Agency. Apparent visually contaminated material within a sampling interval shall be included in the sample portion of the interval to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the PQL for that parameter in the third edition of SW-846. For inorganic parameters, the detection limit achieved during the analysis of the TCLP extract must be at least as low as the RCRA Groundwater Detection Limits, as referenced in SW-846 (Third Edition) Volume 1A, pages TWO-29 and TWO-30, Table 2-15. Unless specified otherwise above, each soil sample collected for laboratory analysis must be analyzed for, at minimum;
 - SW-846 Method 8240 for volatile organic compounds;
 - SW-846 Method 8270 for semi-volatile compounds;
 - SW-846 Method 8080 for PCBs; and ;
 - SW-846 Methods 1311, 2060, 6010, 7470 and 7740 for metals (note that the analyses for metals must be conducted on the extract from the TCLP test)
13. The following procedure must be utilized in the collection of all required soil samples:

Page 7

- a. The procedures used to collect the soil samples must be sufficient so that all soil encountered is classified in accordance with ASTM Method D-2488.
 - b. If a drill rig or similar piece of equipment is necessary to collect required soil samples, then:
 1. The procedures specified in ASTM Method D-1586 (Split Spoon Sampling) or D-1587 (Shalby Tube Sampling) must be used in collecting the samples.
 2. Soil samples must be collected continuously at several locations to provide information regarding the shallow geology of the area where the investigation is being conducted;
 - c. All soil samples which will be analyzed for volatile organic compounds (VOCs) must be collected in accordance with Attachment 7 of the Agency's RCRA closure plan instructions;
 - d. Soil samples not collected explicitly for VOC analysis should be field-screened for the presence of VOCs at all locations where VOCs are a concern;
 - e. All other soil samples must be collected in accordance with the procedures set forth in SW-846; and
 - f. When visually discolored or contaminated material exists within an area to be sampled, horizontal placement of sampling locations shall be adjusted to include such visually discolored and/or contaminated areas. Sample size per interval shall be minimized to prevent dilution of any contamination.
14. If the Agency's DLPC determines, based on the data obtained from the Phase I Workplan activities, that there has been no release of hazardous waste or hazardous constituents to the environment from a SWMU identified in Condition 1 above, then no further investigative action will be required for that SWMU. If the Agency's DLPC determines, based on the data, that there has been a release of hazardous waste or hazardous constituents to the environment or that the data is inconclusive, the Permittee will be notified by the Agency's DLPC.
15. If Safety-Kleen conducts a Phase I investigation which differs from the described above, then it must provide adequate justification in the report required by Condition 2.a above for the variances. As stated in Condition 1 above, the Agency feels that the requirements set forth in this letter are necessary to reach a conclusion that there has not been a release from a given SWMU. If the goals of Safety-Kleen are somewhat different than this, then there may be justification for varying from the requirements set forth in this letter.

Page 8

16. All wastes generated as a result of corrective action activities (e.g., soil cuttings, purged groundwater, equipment decontamination wash and rinsewaters, etc.) are considered Pollution Control Wastes under the provisions of 35 Ill. Adm. Code Part 809, and therefore, at a minimum, classified as a special waste. Safety-Kleen must appropriately characterize these wastes to determine if they are hazardous by characteristic or listing. Should it be determined that these wastes are hazardous, they must be managed as a hazardous waste. In any event, these wastes are considered special wastes, and must be managed as a special waste.
17. The Agency does not accept the use of the corrective action values specified in 55 FR 30798-30884 (July 17, 1990) as a criteria to determine if a particular SUMU has had an impact on human health and the environment. The Agency notes that these levels are proposed, and have not gone into effect on the State or Federal level. When these values were proposed, IEPA submitted substantial comments regarding their inadequacy. Also, it must be noted that the proposed soil action levels did not address the impact the residual soil contamination would have on groundwater. The Agency requires that any action level or cleanup objectives used in Safety-Kleen corrective action plan be demonstrated not to adversely impact human health and the environment.
18. Financial assurance for completion of the approved RFI Phase I activities must be provided to the Agency within 60 days of the Agency approval date of the Phase I RFI Workplan.
19. In accordance with 35 Ill. Adm. Code 702.126, Safety Kleen must provide the Agency with certification of the Phase I RFI Workplan report to be submitted to the Agency after completion of the approved Phase I activities. In addition, the Agency requires that a certification be provided for all laboratory work performed for the purpose of the Phase I activities be provided. Forms for both certifications described above are included as attachments to this Agency response.
20. The Health and Safety Plan contained in the subject workplan is neither approved nor disapproved. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 24 hours of safety and health training off site plus a minimum of one day of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

Page 9

21. Reports must be prepared and submitted to the Agency which describe the activities completed each quarter of the calendar year while the Phase I investigation is being carried out. The quarterly reports shall contain at a minimum:
- a. An estimate of the percentage of the investigation completed;
 - b. Summary of activities completed during the reporting period;
 - c. Summaries of all actual or proposed changes to the Workplan or its implementation;
 - d. Summaries of all actual or potential problems encountered during the reporting period;
 - e. Proposal for correcting any problems;
 - f. Projected work for the next reporting period; and
 - g. Other information or data as requested in writing by the Agency's DLPC.
22. A quarterly report for the work completed from the date of this letter to October 1, 1994 (the first quarter of the current calendar year during which the required Phase I investigation is taking place) must be submitted to the Agency by October 15, 1994. Subsequent quarterly reports must be submitted in a similar manner until the final Phase I RFI Report is submitted to the Agency.
23. The portion of the final RFI Phase I report documenting the results of the required soil sampling/analysis effort must contain the following information, for each SWMU investigated:
- a. A discussion of (1) the reason for the sampling/analysis effort conducted at each SWMU and (2) the goals of the sampling analysis effort conducted at each SWMU;
 - b. A scaled drawing showing the horizontal and vertical location where all soil samples were collected at each SWMU;
 - c. Justification for the locations from which soil samples were collected;
 - d. A description of the procedures used for:
 1. Sample collection;
 2. Sample preservation;

Page 10

3. Chain of custody; and
4. Decontamination of sampling equipment.
- e. Visual classification of each soil sample collected for analysis;
- f. A discussion of the results of any field screening efforts;
- g. A description of the soil types encountered during the investigation, including scaled cross-sections;
- h. A description of the procedures used to analyze the soil samples, including:
 1. The analytical procedure used, including the procedures, if any, used to prepare the sample for analysis;
 2. Any dilutions made to the original sample;
 3. Any interferences encountered during the analysis of each sample; and
 4. The practical quantitation limit achieved, including justification for reporting PQLs which are above those set forth in SW-846.
- i. A description of all quality control/quality assurance analyses conducted, including the analysis of lab blanks, trip blanks and field blanks;
- j. A description of all quality assurance/quality control efforts made overall;
- k. A summary of all analytical data, including QA/QC results, in tabular form;
- l. Copies of the final laboratory sheets which report the results of the analyses, including final sheets reporting quality assurance/quality control data;
- m. Colored photographs documenting the sampling effort; and
- n. A discussion of the collected data. This discussion should identify those sample locations where contaminants were detected and the concentrations of the contaminants. Conclusions which can be drawn from the information compiled should also be included in this discussion.

Page 11

Should you have any questions regarding this matter, please contact Eric Minder at 217/524-3274.

Sincerely,



Douglas W. Clay, P.E.
Hazardous Waste Branch Manager
Permit Section, Bureau of Land

DWC:EM/mls/sp323W/1-11

JKM

Attachments: RFI Phase I Certification
RFI Phase I Laboratory Certification Statement

cc: USEPA Region V -- George Hamper



Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

March 9, 1994

Mr. Scott Davies
Safety-Kleen
1000 North Randall Road
Elgin, Illinois 60123-7857

RECEIVED
MAR 14 1994

Environmental Remediation
SAFETY-KLEEN CORP.

Re: 0310690006 - Cook County
Safety-Kleen/Dolton
ILD980613913
Received: November 17, 1993
Log No.: B-120
RCRA Permit

Dear Mr. Davies:

This letter is in response to your correspondence of November 12, 1993 regarding revision of the approach of the corrective action investigations for the above referenced Safety-Kleen facility. Since the date of the letter, Agency representatives were given the opportunity to visit the site and inspect the Solid Waste Management Units (SWMUs) for which corrective action investigations were required in the permit. Based upon the results of this site inspection and discussions with Safety-Kleen representatives, the following provides a modification of the list of SWMUs for which corrective action investigations are required, and Agency recommendations for corrective action investigations for each:

<u>No.</u>	<u>SWMU Name</u>	<u>Required Phase I Action</u>
1.	Process Building	Integrity evaluation
2.	West Tank Farm Area (includes Tank Farms #3, 4, 5, and 6 and Process Areas)	Sampling/analysis
3.	Former South Tank Farm Area	Sampling/analysis
4.	East Field	Sampling/analysis
5.	Truck Stations #3, 4, 5, 6, , 9, and 10	Sampling/analysis around perimeter of concrete pads
6.	Driveway to the Facility	Sampling/analysis
7.	Newly Sited Areas:	
	Former Barker Chemical Property	Sampling/analysis
	Former Rexnord/Precision Aire Property	Waste management assessment, sampling/analysis as necessary
	Agri-Chain	Waste management assessment, sampling/analysis as necessary

The required Phase I action for the Process Building should consist of an assessment of its base. It must be conducted by an independent registered professional engineer to determine if the integrity of the pavement and secondary containment structures is such that former releases and potential future spills have not had/do not have a direct migration pathway to the underlying or surrounding soils. The results of this integrity evaluation should be documented in a report which outlines the assessment procedures, and provides a recommendation of whether further corrective actions are necessary based upon the results of the assessment.

In addition, the Agency has revised the list of SWMUs to delete those units regulated under the terms, conditions and requirements of the facility's RCRA Part B permit. The Agency hereby notes that these units will be subject to the RCRA closure standards and requirements of 35 Ill. Adm. Code 724, of which the requirements for environmental investigation are similar, but not identical to corrective action. Of obvious exception to this, the Agency has recommended sampling and analytical activities in the areas of the facility Truck Stations. Information contained in Agency files and in the facility RCRA Part B permit application indicate a number of releases occurring within and in the area of the facility truck stations and loading/unloading areas. During the site inspection, it was evident that some of the truck stations lacked secondary containment structures (i.e., curbs, etc.) to keep large-quantity spills from migrating to surrounding, unpaved areas. In addition, it is unclear from review of available information when such secondary containment structures were constructed or in use during operations by previous owners of this property.

Finally, the required Phase I action for the areas where Rexnord/Precision Aire and Agri-Chain are located or are currently operating consists of an assessment of the waste management activities. The results of such a waste management assessment must be provided to the Agency in the form of a report, and include the following information, at a minimum:

1. A review of current business activities at each site, including waste generation and disposal;
2. A review of historical business activities at each site, including information regarding historic waste generation, management and disposal activities;
3. A discussion of the procedures and the results of a site inspection conducted by a qualified environmental professional which identifies specific historical waste management procedures or current waste management activities which have caused, are suspected to have caused, or are currently causing adverse environmental impact. Of special concern is the identification of any solid waste management units at these properties. This report should include facility maps indicating those areas of concern;
4. Photographs of those areas and/or units identified under 3. above; and
5. A summary of the results of the waste management assessment for the facility, including a discussion of informational gaps and a recommendation for the necessity of further environmental investigations for those units or areas specifically identified under 3. above based on the findings of the review and site inspection.

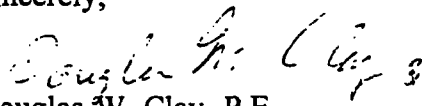
Mr. Davies
Page 3

These reports would be required to be submitted to the Agency for review and approval by no later than December 31, 1997. Based upon the results of this assessment, the Agency and Safety-Kleen would determine the necessity for RFI Phase I activities, including sampling/analysis if necessary, at those suspect locations and/or units identified within the waste management assessment report. It is respectfully requested that Safety-Kleen contact the Agency prior to conducting the site inspection at these two locations and provide the Agency with an opportunity to accompany Safety-Kleen personnel during these inspections.

Currently, the facility RCRA Part B calls for submission of the RFI Phase I Workplan by March 4, 1994. Should additional time be needed to complete this submittal, Safety-Kleen should contact the Agency to modify the submission date.

Should you have any questions regarding this letter, please contact Eric Minder at 217/524-3300.

Sincerely,


Douglas W. Clay, P.E.
Hazardous Waste Branch Manager
Permit Section, Bureau of Land

DWC:EM
JKM

cc: USEPA Region V - George Hamper

APPENDIX B

QUALITY ASSURANCE PROJECT REPORT (QUAPR)
RCRA FACILITY INVESTIGATION
PHASE I RELEASE ASSESSMENT
SAFETY-KLEEN RECYCLE CENTER, DOLTON, ILLINOIS

**APPENDIX B
TABLE OF CONTENTS**

	<u>Page</u>
Introduction	B-1
Project Description	B-1
Quality Assurance Evaluations	B-1
Field Procedures Quality Control Evaluation	B-2
Laboratory Data Quality Control Evaluation	B-4
Method Detection Limits	B-6
VOCs	B-6
SVOCs	B-8
PCBs	B-9
Metals	B-9
Accuracy and Precision	B-9
Soil VOCs	B-10
Soil SVOCs	B-20
Soil PCBs	B-25
Soil TCLP Metals	B-25
Water VOCs	B-30
Water SVOCs	B-34
Water Dissolved Metals	B-37
Overall Project Data Evaluation	B-37
Overall Completeness of Soil Quality Data	B-37
Overall Completeness of Ground-water Quality Data	B-46
Representativeness	B-46
Comparability	B-48

APPENDIX B LIST OF TABLES

<u>Table</u>	<u>Page</u>
B-1 Reported MDLs Versus MDL Goals for Soil VOCs, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-7
B-2 Soil Sample Holding Times, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-11
B-3 Comparison of 1-Gram and 5-Gram Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-13
B-4 Soil Sample QA/QC Summary, Volatile Organic Compounds, Phase I RFI, Dolton Recycle Center, Dolton, Illinois	B-17
B-5 Quantitation Groups, Volatile Organic Compounds, Method 8240, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-19
B-6 Soil VOCs Duplicate Sample Comparison, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-21
B-7 Soil Data QA/QC Summary, Semi-Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton Illinois	B-22
B-8 Quantitation Groups, Semivolatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-24
B-9 Soil SVOCs Duplicate Comparison, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-26
B-10 Polychlorinated Biphenyl Sample QA/QC Summary, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-27
B-11 Soil Data QA/QC Summary, Metals, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-28
B-12 TCLP Metals Duplicate Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-31
B-13 Ground-Water Sample Holding Times, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-32
B-14 Ground-Water Sample QA/QC Summary, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-33

LIST OF TABLES
(continued)

<u>Table</u>	<u>Page</u>
B-15 Ground-Water Duplicate Sample Comparison, Volatile Organic Compounds, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-35
B-16 Ground-Water Data QA/QC Summary, Semivolatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle center, Dolton, Illinois	B-36
B-17 Ground-Water Data QA/QC Summary, Dissolved Metals, Phase I RFI, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	B-38
B-18 Dissolved Metals Duplicate Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-39
B-19 Summary of Qualified Data, Soil Quality Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-40
B-20 Summary of Qualified Data, Water Quality Data, Safety-Kleen Dolton Recycle Center, Dolton, Illinois	B-47

**APPENDIX B
LIST OF FIGURES**

<u>Figure</u>	<u>Page</u>
B-1 Project Management Team, Phase I Release Assessment, Safety-Kleen Corp. Recycle Center, Dolton, Illinois	B-5

APPENDIX B

QUALITY ASSURANCE PROJECT REPORT (QuAPR)

Introduction

This Quality Assurance Project Report contains the quality assurance/quality control (QA/QC) evaluations of the investigative (RFI) data collected during the Phase I RCRA Facility Investigation at the Safety-Kleen Dolton Recycle Center in Dolton, Illinois. The evaluations were conducted to ensure that the investigative data are sufficiently precise, accurate, representative, and complete to achieve the RFI project objectives. The evaluations were performed in accordance with the RCRA Facility Investigation Quality Assurance Project Plan (QuAPjP), which was included as Part VII of the RFI Workplan.

Project Description

The purpose of the Phase I RFI at the Safety-Kleen Dolton Recycle Center in Dolton, Illinois was to determine whether a release of hazardous constituents had occurred from the solid waste management units (SWMUs), and area of concern (AOC) to soils or air. During Phase I, Safety-Kleen (S-K) also collected additional soils and ground-water data to assist in the design of any subsequent investigations at the site. The Phase I investigation involved a single sampling event which consisted of soil and ground-water sampling in the vicinities of the SWMUs and AOC. Sixty-one soil samples were submitted for laboratory analysis of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and eight TCLP metals. Twenty-one water samples were submitted for laboratory analysis of VOCs, 18 water samples were submitted for laboratory analysis of SVOCs, and 10 water samples were submitted for laboratory analysis of eight dissolved metals. The laboratory results were used to determine whether a release had occurred from the units under investigation, and will also be used to assist in designing any subsequent investigations at the site.

Quality Assurance Evaluations

The quality assurance objectives provide quantitative and qualitative measures of the ability to produce high-quality results through a properly designed sampling and analysis program. The objectives of the overall quality assurance/quality control (QA/QC) program were to:

- Ensure that all procedures were documented, including any changes from the Workplan protocol as approved with conditions by the Illinois Environmental Protection Agency (IEPA).
- Ensure that all sampling and analytical procedures were conducted according to sound scientific principles.
- Monitor the performance of the field sampling team and laboratory with a systematic audit program and provide for corrective action necessary to assure quality.
- Evaluate the quality of the analytical data through a system of quantitative and qualitative criteria.
- Ensure that all data and observations are properly recorded and archived.

The degree to which these objectives were satisfied during the performance of the RFI is discussed below. This analysis is divided into the following:

1. Field Procedures Quality Control Evaluation
2. Laboratory Data Quality Control Evaluation (for method Detection Limits, Accuracy, Precision, and Completeness)
3. Overall Evaluation of Data Representativeness and Comparability

Field Procedures Quality Control Evaluation

Quality control during the field procedures was attained through:

- Compliance with the Workplan as approved with conditions by IEPA;
- Use of a qualified and experienced field team;
- Proper recording and archiving of all field data;
- Documentation of any changes from the Workplan in daily field memoranda, field audit reports, and quarterly progress reports to IEPA;
- Coordination of field activities with Safety-Kleen site personnel; and
- A systematic audit of field activities.

The field procedures are described in Part IV of the RFI Workplan and chapters 4 and 5 of this document. The RFI was conducted in accordance with the Workplan as approved with conditions by IEPA, except that:

- TriHydro Corporation, the consultant on the project, has encountered somewhat inaccurate water level data on other projects when measuring water levels in EASI installations. Therefore, 14 1-inch piezometers were installed for ground-water sampling so that accurate ground-water elevations could be determined using an electronic probe. Piezometers were installed where surface conditions allowed. Ground-water sampling at other locations was performed using GEO Environmental EASI installations as specified in the Workplan. Table 5-1 indicates where EASIs and Piezometers were installed. The potentiometric surface map constructed using the piezometer data is included as Figure 7-1 in this report.
- Some of the shallow soil samples were collected at depths of 3.5-5.5 or 4-6 feet below ground surface (ft-bgs) instead of the 1-3 ft-bgs specified in the Workplan. This allowed collection of representative coherent samples below a zone of concrete slough. In all cases, soil was collected at the shallowest interval in which a coherent sample could be obtained. In the Process Building area (locations PB-1 and PB-2), a single sample was collected from the 12 to 24-inch depth interval. Due to sloughing, coherent samples could not be obtained from the 6 to 12 inch interval specified in the IEPA approval letter.
- A number of ground-water sampling points produced insufficient water to allow collection of enough sample for a full suite of analyses to be performed. Accordingly, sample collection was performed in a manner that ensured that as many analyses as possible could be performed on the limited amount of water. In addition, one ground-water sample from each SWMU or AOC was analyzed for the full suite of constituents. Insufficient water was obtained to allow for the analysis of matrix spike and matrix spike duplicate samples. Blank spikes were analyzed instead.
- Field blanks, prepared in the field using store-bought distilled water, and shipped with the investigative samples were analyzed for VOCs rather than trip blanks, prepared with laboratory water. Results from trip blanks can indicate sample contamination during sample transport and analysis. Field blanks can indicate these two sources of error plus contamination of the distilled water used for equipment decontamination. Therefore, the results from the field blanks will be more inclusive than those from trip blanks. Toluene (0.011 mg/L) was detected in one (FB-2) of the two field blanks.
- After crushed drums were discovered at the Barker Chemical No. 2 site, the sampling effort was expanded from three shallow soil samples, as specified in the Workplan, to eleven shallow soil samples and two drum content samples. IEPA (Eric Minder) was notified by phone of the drum discovery and expanded sampling effort. The result of this change was to increase the amount of information acquired during the RFI and improve the interpretation of the data.

The project management structure is presented on Figure B-1. The minor changes in management structure from that proposed in the RFI Workplan are indicated on Figure B-1. These changes increased the expertise and experience levels of the project team beyond those proposed in the Workplan. Qualifications of the project team members are presented in Appendix B-1.

Field data are complete with respect to the Workplan requirements for Phase I. They are archived as Appendix D of this report. The few changes from the Workplan procedures are documented in the quarterly reports (dated October 24, 1994 and January 12, 1995) and in this Phase I report.

To ensure quality control during the field investigation, a field audit was performed by Jack Bedessem of TriHydro Corporation. The results of the field audit are presented in Appendix B-2.

Laboratory Data Quality Control Evaluation

The objective of the Phase I RFI was to determine whether a release had occurred from any of the SWMUs and AOC at the Dolton Recycle Center. As specified in the RFI Workplan, this determination was made on the basis of laboratory data, which were subjected to data validation procedures described in the Workplan. This section provides the results of the quantitative evaluation of the laboratory data.

The laboratory data were evaluated quantitatively in terms of method detection limits, precision, accuracy, and completeness. Data which did not satisfy the quantitative criteria in the QuAPjP were defined as "qualified." Safety-Kleen has taken the conservative approach and qualified all data which do not satisfy the QC limits exactly. Safety-Kleen has also evaluated qualified data and determined if they can be used to achieve the project objectives. Qualified data which were found to be consistent with data which were not qualified were considered useful in achieving project objectives.

The laboratory data collected during the Phase I RFI included:

- Analysis of 82 investigative samples (61 soil samples and 21 water samples), eight field duplicates (6 soil duplicates and 2 water duplicates), two equipment blanks and two field blanks for Volatile Organic Compounds (VOCs) by EPA Method 8240;
- Analysis of 79 investigative samples (61 soil samples and 18 water samples), eight field duplicates (6 soil duplicates and 2 water duplicates), two equipment blanks and two field blanks for Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270; and
- Analyses of 71 investigative samples (61 soil samples and 10 water samples), eight field duplicates (six soil duplicates and two water duplicates), two equipment blanks and two field blanks samples for eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury,

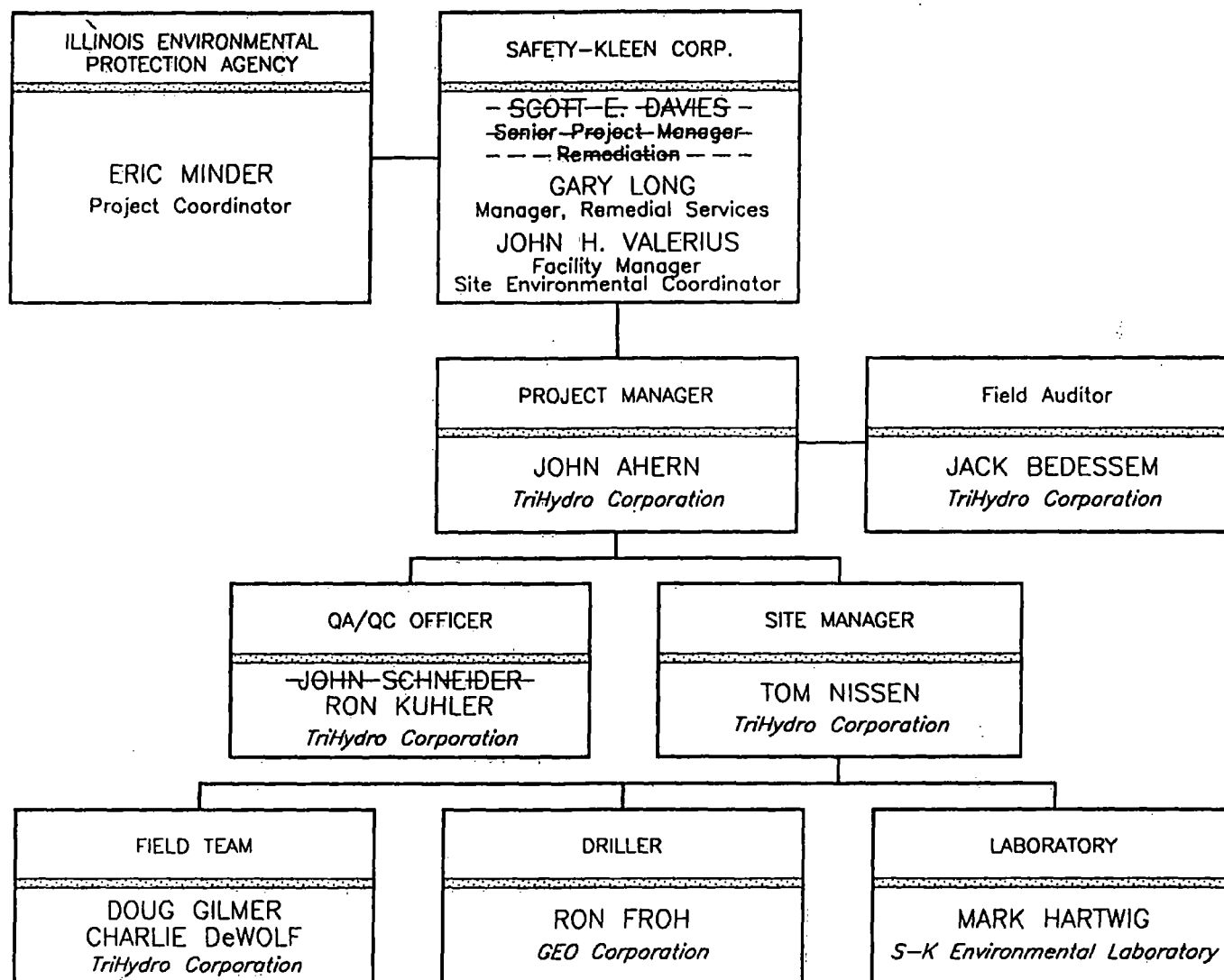


FIGURE B-1 :PROJECT MANAGEMENT TEAM, PHASE I RELEASE ASSESSMENT, SAFETY-KLEEN CORP. RECYCLE CENTER, DOLTON, ILLINOIS

selenium and silver) by EPA inductively coupled plasma and graphite furnace atomic absorption methods. The metals analyses for soils were performed on TCLP extracts. The (dissolved) metals analyses for the water samples were performed on filtered samples.

The table below summarizes the level of quality control data collection relative to that specified in the QuAPjP:

QA/QC Data	QuAPjP Target Level	Soil VOCs	Soil SVOCs	TCLP Metals	Water VOCs	Water SVOCs	Water Diss metals
Field Duplicates	1 / 10	6 / 61	6 / 61	6 / 61	2 / 21	2 / 18	2 / 10
Matrix Spike/ Matrix Spike Duplicate	1 / 20 or 1 / batch	3 / 61	8 / 61	11-13/ 61	3 / 21	3 / 18 Bl. Spk.	2 / 10
Surrogate Spike	ALL	ALL	ALL	ALL	ALL	ALL	ALL
Method Blank	1 / 20 or 1 / batch	14 / 61	3 / 61	4-8/61	3 / 21	3 / 21	Calib. Blanks

The level of field duplicate collection for both soil (all constituents) and water (VOCs only) fell slightly short of the target level. However, this slight variance does not impact the overall data quality. The QC level for matrix spikes for soil VOCs was also slightly less than the target level. All other target levels for quality control data were achieved.

The level of quality control for PCBs was not specified in the QuAPjP. The actual QC level for PCBs was one matrix spike/matrix spike duplicate pair, three blank spikes, two method blanks, and two field duplicates for 10 investigative samples.

Method Detection Limits

The method detection limits (MDLs) goals are listed for each constituent in Table 5-1 of Appendix VII-A of the QuAPjP. The actual MDLs for the analysis of each constituent in each sample are provided in the laboratory reports in appendices F and G. In general, the reported MDLs were higher than the MDL goals in most samples for VOCs (EPA Method 8240) and in some samples for SVOCs in soil (EPA Method 8270). The VOC, SVOC, and dissolved metal MDL goals for ground water were achieved for all ground-water samples except for W-6 (SVOCs only). The MDLs for each constituent group are discussed below.

VOCs. A comparison of the reported soil VOC (8240) MDLs to the MDL goals is presented in Table B-1. All samples with the exception of FF-2 (18-20) and BC-2A (1-2) had a severe matrix interference that resulted in unacceptably low surrogate

Table B-1. Reported MDLs Versus MDL Goals for Soil VOCs, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Constituent	MDL Goal	Diluted Samples (1 gram)		Undiluted Samples (5 gram) ¹	
		Reported MDL	Comments	Reported MDL	Comments
Acetone	0.1	0.1	Meets Goal	0.1	Meets Goal
Benzene	0.005	0.025	5 x Goal	0.005	Meets Goal
Bromodichloromethane	0.005	0.025	5 x Goal	0.005	Meets Goal
Bromoform	0.005	0.025	5 x Goal	0.005	Meets Goal
Bromomethane	0.01	0.025	2.5 x Goal	0.01	Meets Goal
Carbon Disulfide	0.1	0.1	Meets Goal	0.1	Meets Goal
Carbon Tetrachloride	0.005	0.025	5 x Goal	0.005	Meets Goal
Chlorobenzene	0.005	0.025	5 x Goal	0.005	Meets Goal
Chloroethane	0.01	0.025	2.5 x Goal	0.01	Meets Goal
Chloroform	0.005	0.025	5 x Goal	0.005	Meets Goal
Chloromethane	0.01	0.025	2.5 x Goal	0.01	Meets Goal
Dibromochloromethane	0.005	0.025	5 x Goal	0.005	Meets Goal
1,1-Dichloroethane	0.005	0.025	5 x Goal	0.005	Meets Goal
1,2-Dichloroethane	0.005	0.025	5 x Goal	0.005	Meets Goal
1,1-Dichloroethene	0.005	0.025	5 x Goal	0.005	Meets Goal
cis-1,2-Dichloroethene	0.005	0.025	5 x Goal	0.005	Meets Goal
trans-1,2-Dichloroethene	0.005	0.025	5 x Goal	0.005	Meets Goal
1,2-Dichloropropane	0.005	0.025	5 x Goal	0.005	Meets Goal
cis-1,3-Dichloropropene	0.005	0.025	5 x Goal	0.005	Meets Goal
trans-1,3-Dichloropropene	0.005	0.025	5 x Goal	0.005	Meets Goal
Ethylbenzene	0.005	0.025	5 x Goal	0.005	Meets Goal
2-Hexanone	0.05	0.05	Meets Goal	0.05	Meets Goal
Methylene Chloride	0.005	0.025	5 x Goal	0.005	Meets Goal
2-Butanone (MEK)	0.1	0.1	Meets Goal	0.1	Meets Goal
4-Methyl-2-Pentanone	0.05	0.05	Meets Goal	0.05	Meets Goal
Styrene	0.005	0.025	5 x Goal	0.005	Meets Goal
1,1,2,2-Tetrachloroethane	0.005	0.025	5 x Goal	0.005	Meets Goal
Tetrachloroethene (PERC)	0.005	0.025	5 x Goal	0.005	Meets Goal
Toluene	0.005	0.025	5 x Goal	0.005	Meets Goal
1,1,1-Trichloroethane	0.005	0.05	10 x Goal	0.01	2 x Goal
1,1,2-Trichloroethane	0.005	0.05	10 x Goal	0.01	2 x Goal
Trichloroethene	0.005	0.025	5 x Goal	0.005	Meets Goal
Trichlorofluoromethane	0.01	0.05	5 x Goal	0.01	Meets Goal
Trichlorotrifluoroethane	0.005	0.05	10 x Goal	0.01	2 x Goal
Vinyl Acetate	0.05	0.05	Meets Goal	0.05	Meets Goal
Vinyl Chloride	0.01	0.035	3.5 x Goal	0.01	Meets Goal
Xylenes (Total)	0.005	0.025	5 x Goal	0.005	Meets Goal

Note: ¹Samples that did not require dilution were FF-2(18-20) and BC-2A(1-2).

recoveries. To overcome the interference, the samples were reanalyzed at sample weight of 1 gram versus the normal 5 grams. This change resulted in an increase in the MDLs by a factor of five. Samples which were analyzed at a five gram sample weight, FF-2 (18-20) and BC-2A (1-2), met all the VOC MDL goals with the exceptions of 1,1,1-Trichloroethane and 1,1,2-Trichloroethane which were reported at two times the MDL goal (0.005 mg/Kg). All the reported soil MDLs met or exceeded the requirements for IEPA Class II groundwater protection with the exception of vinyl chloride (Class II Standard of 0.01 mg/kg versus the reported MDL of 0.035). For these reasons, the elevated MDLs for VOCs in soils are not expected to have any adverse impact on achieving the Phase I objectives.

SVOCs. The reported soil SVOC MDLs (Method 8270) achieved the goals established in the QuAPjP with the exception of the following samples:

- CD-1, 5 times the MDL goal;
- 5-2 (18-20), 5 times the MDL goal;
- BC-6 (1-2), 5 times the MDL goal;
- BC-8 (1-2), 5 times the MDL goal;
- BC-9 (1-2), 5 times the MDL goal;
- BC-10 (1-2), 5 times the MDL goal;
- BC-D1, 100 times the MDL goal; and
- BC-D2, 50 times the MDL goal.

This group contains a duplicate from Truck Station No. 10 (CD-1[1-3]), and one of four deep soil samples from the Truck Station No.5/North Warehouse Pad area (5-2[18-20]). Data from other samples in the vicinity of these SWMUs provide adequate results to identify a release of SVOCs to soils.

The group also contains four of the eleven soil samples and both drum samples from the Barker Chemical No. 2 area. The extracts of these samples (especially the drum contents samples) were highly impacted by the presence of non-target hydrocarbons. These non-target hydrocarbons prevented the optimum recovery of the surrogate compounds. Sample dilution was necessary to lower the non-target hydrocarbon interference to levels where the surrogates were recovered at appropriate levels. Some of these samples were re-analyzed using the Single Ion Monitoring (SIM) technique to lower the detection limits for Polynuclear Aromatic Hydrocarbons (PAHs). SIM data are indicated in the data tables and laboratory data sheets in Appendix F.

All the reported MDLs for the analysis of water samples for semi-volatiles (8270) achieved the MDL goals, with one exception. Because of the limited amount of water obtained at location W-6, the detection limits for all SVOC analyses were in-

creased by a factor of three due to dilution. Because of the abundance of ground-water quality data in the vicinity of W-6, this situation will not adversely affect the utility of the Phase I ground-water data in the design of Phase III.

PCBs. Polychlorinated biphenyls (PCBs) in soils were analyzed by EPA Method 8080. No established MDLs or PQLs exist in that method for the aggregate or total PCBs. Because PCBs were added by IEPA to the constituent list after completion of the Workplan and QuAPjP, the QuAPjP provides no guidance for MDLs for PCBs.

In EPA Method 8080, PCB 1242 has a listed PQL of 0.065 ug/L for water and a multiplier of 670 for low level soils (0.044 mg/Kg) and a multiplier of 10,000 for high level soils (0.65 mg/Kg). The reported MDLs for total PCBs were 0.05 mg/Kg, with the exception of BC-5 (1-2) which was reported at 0.1 mg/Kg. Therefore, the MDL for total PCBs satisfies the goal for PCB 1242.

Metals. Reported MDLs met or were lower than the MDL goals for all TCLP leachate metals in soil samples. Reported MDLs met or were lower than the MDL goals for dissolved metals in water samples with the exception of arsenic, for which the reported MDL was 0.025 mg/L versus a 0.013 mg/L MDL goal. All reported MDLs for dissolved metals in water samples were lower than the Class I ground-water protection standards.

Accuracy and Precision

The following criteria were used to validate data for accuracy and precision:

1. Accuracy

- Holding Time Requirements
- Surrogate Recovery Ranges (organic constituents only)
- Matrix Spike Recovery Ranges
- Instrument Calibration Frequency
- Method Blanks
- Laboratory Control Samples (inorganic constituents only)

2. Precision

- Field Duplicate Results
- Matrix Spike/ Matrix Spike Duplicate Reproducibility

For each of the criteria except field duplicate results, quantitative acceptability limits have been established in the QuAPjP and in SW-846. The objective of the laboratory data audit was to determine for which data these limits were not met and what effect those situations had on the use of the data to achieve the RFI objectives.

Soil VOCs. The quality assurance review resulted in the qualification of 1,023 of the 2,479 VOC data (41%), principally due to exceeding the allowable holding times. The reasons for the qualifications are described below.

Holding times for the soil VOC analyses are presented in Table B-2; 25 samples had holding times that exceeded the required holding times. All VOC data for these samples were qualified on this basis. Since holding times were exceeded by a maximum of 4 days, the data were deemed usable for the purpose of identifying potential SWMU releases.

Holding times were exceeded due to reanalysis of the samples at 1 gram (dilution by a factor of five). The dilution and reanalysis were necessary because matrix interferences in the soils resulted in unacceptably low levels of surrogate recoveries in the 5-gram analyses. The laboratory indicated that the matrix interferences were specific to the soil samples of this investigation. The matrix interferences did not occur in samples from other investigations that were analyzed during the same time period. However, the laboratory indicated that such effects are common in clays such as those at the Dolton Recycle Center, and can be independent of the presence of target hydrocarbons.

Surrogate recoveries for one gram samples were considerably better than most of the 5 gram surrogate recoveries, but matrix effects and interferences were still evident in the reported surrogate recoveries. A comparison of 5 and 1 gram soil VOC data is included as Table B-3.

VOC QA/QC data on surrogate recoveries (accuracy) and matrix spike/matrix spike duplicates (precision) are summarized in Table B-4. Surrogate recovery goals were exceeded for 13 toluene- d_8 , 15 bromofluorobenzene and 17 1,2-dichloroethane- d_4 surrogates. Because high surrogate recoveries suggest that the reported constituent concentrations may be higher than the actual concentrations, all detected constituents in the quantification group corresponding to the out of control surrogate were qualified as conservatively high. The quantitation groups were based on retention times and are presented in Table B-5. A total of 88 of the 2590 investigative VOC data (3.4%) were qualified due to high surrogate recoveries. Note that non-detect data are not qualified in cases of high surrogate recoveries.

Surrogate recoveries were less than the recovery goals for 4 toluene- d_8 and 7 bromofluorobenzene surrogates. Low surrogate recoveries suggest that reported concentrations are artificially low and that constituents present at low levels may not have been detected. Therefore, in the case of low surrogate recoveries, each of the data included within the quantification group (Table B-5) associated with the out of

Table B-2. Soil Sample Holding Times, Phase I RFI, Safety-Kleen Doltan Recycle Center, Doltan, Illinois.

Samples ¹	Sample Collection Date	VOC Analysis Date (1 gram)	VOC Analysis Date (5 gram)	SVOC Extraction Date	SVOC Analysis Date	PCB Extraction Date	PCB Analysis Date	Metals Leach Dates	Metals Analysis Dates
<u>SW-846 Limit</u>			14 days	14 days	40 days	14 days	40 days		6 months
<u>East Field</u>									
EF-1 (1-3)	9/12/94	9/28/94	—	9/15/94	9/22/94	9/26/94	10/7/94	9/15/94	9/16/94-9/28/94
EF-1 (18-20)	9/12/94	9/28/94	—	9/15/94	9/22/94	—	—	9/15/94	9/16/94-9/21/94
EF-2 (1-3)	9/12/94	9/28/94	—	9/15/94	9/23/94	—	—	9/15/94	9/16/94-9/24/94
EF-2 (18-20)	9/12/94	9/28/94	—	9/15/94	9/27/94	—	—	9/15/94	9/16/94-9/21/94
EF-3 (1-3)	9/12/94	9/28/94	—	9/15/94	9/23/94	—	—	9/15/94	9/16/94-10/8/94
EF-3 (18-20)	9/12/94	9/28/94	—	9/15/94	9/23/94	—	—	9/17/94	9/20/94-9/28/94
EF-4 (1-3)	9/12/94	9/28/94	—	9/15/94	9/23/94	—	—	9/17/94	9/20/94-9/28/94
EF-4 (18-20)	9/12/94	9/28/94	—	9/15/94	9/23/94	—	—	9/17/94	9/20/94-9/28/94
<u>Former Southeast Field</u>									
FF-1 (1-3)	9/13/94	9/28/94	—	9/15/94	9/26/94	—	—	9/17/94	9/20/94-9/28/94
FF-1 (18-20)	9/14/94	9/28/94	—	9/16/94	9/27/94	—	—	9/17/94	9/20/94-10/4/94
FF-2 (1-3)	9/14/94	9/28/94	—	9/16/94	9/27/94	—	—	9/17/94	9/20/94-10/6/94
FF-2 (18-20)	9/14/94	—	9/28/94	9/16/94	9/27/94	—	—	9/17/94	9/20/94-9/28/94
FF-3 (1-3)	9/14/94	9/30/94	—	9/17/94	9/23/94	—	—	9/17/94	9/20/94-10/4/94
FF-3 (18-20)	9/14/94	9/30/94	—	9/17/94	9/23/94	—	—	9/17/94	9/20/94-9/28/94
<u>Truck Station 10</u>									
10-1 (1-3)	9/14/94	9/29/94	—	9/17/94	9/23/94	—	—	9/17/94	9/20/94-9/28/94
CD-1 (1-3)	9/14/94	9/29/94	—	9/17/94	9/27/94	—	—	9/17/94	9/20/94-10/5/94
10-1 (18-20)	9/14/94	9/29/94	—	9/17/94	9/26/94	—	—	9/17/94	9/20/94-9/28/94
10-2 (1-3)	9/14/94	9/29/94	—	9/17/94	9/26/94	—	—	9/17/94	9/20/94-9/29/94
CD-2 (1-3)	9/14/94	9/30/94	—	9/17/94	9/26/94	—	—	9/20/94	9/22/94-10/4/94
10-2 (18-20)	9/14/94	9/29/94	—	9/17/94	9/26/94	—	—	9/17/94	9/20/94-9/29/94
<u>Former Tank Farm D/Truck Station No. 3</u>									
D-1 (1-3)	9/16/94	9/29/94	—	9/20/94	9/27/94	9/19/94	9/19/94	9/21/94	9/22/94-10/8/94
D-1 (18-20)	9/16/94	9/29/94	—	9/20/94	9/30/94	—	—	9/21/94	9/22/94-10/5/94
D-2 (1-3)	9/13/94	9/28/94	—	9/15/94	9/23/94	—	—	9/17/94	9/20/94-9/28/94
D-2 (18-20)	9/13/94	9/28/94	—	9/15/94	9/26/94	—	—	9/17/94	9/20/94-9/28/94
D-3 (4-6)	9/16/94	9/29/94	—	9/20/94	9/27/94	—	—	9/22/94	9/26/94-10/5/94
D-3 (18-20)	9/16/94	9/29/94	—	9/20/94	9/27/94	—	—	9/22/94	9/26/94-10/5/94
<u>West Tank Farm/Driveway to Facility/Process Building</u>									
W-1 (1-3)	9/14/94	9/30/94	—	9/17/94	9/26/94	—	—	9/20/94	9/22/94-9/30/94
W-1 (18-20)	9/14/94	9/30/94	—	9/17/94	9/26/94	—	—	9/20/94	9/22/94-10/4/94
W-2 (4-6)	9/16/94	9/29/94	—	9/20/94	9/28/94	9/19/94	10/10/94	9/27/94	9/29/94-10/7/94
CD-5 (4-6)	9/16/94	9/30/94	—	9/21/94	9/29/94	9/19/94	9/20/94	9/22/94	9/26/94-10/5/94
W-2 (18-20)	9/16/94	9/30/94	—	9/20/94	9/28/94	—	—	9/27/94	9/29/94-10/7/94
W-3 (4-6)	9/16/94	9/29/94	—	9/20/94	9/27/94	—	—	9/21/94	9/22/94-10/5/94
W-3 (18-20)	9/16/94	9/29/94	—	9/20/94	9/30/94	—	—	9/27/94	9/29/94-10/7/94
CD-4 (18-20)	9/16/94	9/30/94	—	9/21/94	9/27/94	—	—	9/22/94	9/26/94-10/5/94

Table B-2. Soil Sample Holding Times, Phase I RFI, Safety-Kleen Doltan Recycle Center, Doltan, Illinois.

Samples ^a	Sample Collection Date	VOC Analysis Date (1 gram)	VOC Analysis Date (5 gram)	SVOC Extraction Date	SVOC Analysis Date	PCB Extraction Date	PCB Analysis Date	Metals Leach Dates	Metals Analysis Dates
W-4 (1-3)	9/15/94	9/29/94	—	9/20/94	9/27/94	—	—	9/20/94	9/22/94-9/30/94
W-4 (18-20)	9/15/94	9/29/94	—	9/20/94	9/27/94	—	—	9/20/94	9/22/94-9/30/94
W-5 (1-3)	9/14/94	9/29/94	—	9/17/94	9/29/94	—	—	9/20/94	9/22/94-10/4/94
CD-3 (1-3)	9/14/94	9/30/94	—	9/17/94	9/26/94	—	—	9/20/94	9/22/94-10/4/94
W-5 (18-20)	9/14/94	9/29/94	—	9/17/94	9/29/94	—	—	9/20/94	9/22/94-9/30/94
W-6 (1-3)	9/15/94	9/29/94	—	9/20/94	9/27/94	9/19/94	9/20/94	9/20/94	9/22/94-10/4/94
W-6 (18-20)	9/15/94	9/29/94	—	9/20/94	9/28/94	—	—	9/21/94	9/22/94-10/5/94
W-7 (3.5-5.5)	9/16/94	9/29/94	—	9/20/94	9/29/94	—	—	9/22/94	9/26/94-10/5/94
W-7 (18-20)	9/16/94	9/29/94	—	9/20/94	9/27/94	—	—	9/21/94	9/22/94-10/5/94
PB-1 (0.5-2.5)	9/16/94	9/30/94	—	9/21/94	9/26/94	—	—	9/27/94	9/29/94-10/7/94
PB-2 (0.5-2.5)	9/16/94	9/30/94	—	9/21/94	9/29/94	—	—	9/21/94	9/22/94-10/5/94
Truck Station No. 5/North Warehouse Pad									
5-1 (1-3)	9/15/94	9/29/94	—	9/17/94	9/26/94	—	—	9/29/94	10/3/94-10/7/94
5-1 (18-20)	9/15/94	9/29/94	—	9/17/94	9/27/94	—	—	9/20/94	9/22/94-9/29/94
5-2 (1-3)	9/15/94	9/29/94	—	9/20/94	9/27/94	—	—	9/20/94	9/22/94-10/4/94
5-2 (18-20)	9/15/94	9/29/94	—	9/20/94	9/28/94	—	—	9/20/94	9/22/94-9/29/94
5-3 (4-6)	9/16/94	9/30/94	—	9/20/94	9/29/94	—	—	9/27/94	9/29/94-10/7/94
5-3 (18-20)	9/16/94	9/30/94	—	9/20/94	9/29/94	—	—	9/21/94	9/22/94-10/5/94
6-1 (1-3)	9/15/94	9/29/94	—	9/17/94	9/26/94	—	—	9/20/94	9/22/94-10/4/94
6-1 (18-20)	9/15/94	9/29/94	—	9/17/94	9/26/94	—	—	9/20/94	9/22/94-10/7/94
Barker Chemical #2 Area									
BC-2	9/10/94	9/24/94	—	9/13/94	9/22/94	9/19/94	9/19/94	9/15/94	9/16/94-9/21/94
BC-3 (1-2)	9/17/94	9/28/94	—	9/20/94	9/26/94	—	—	9/21/94	9/22/94-9/26/94
BC-4 (1-2)	9/17/94	9/28/94	—	9/20/94	9/26/94	9/29/94	10/5/94	9/21/94	9/22/94-9/26/94
BC-5 (1-2)	9/17/94	9/28/94	—	9/20/94	9/26/94	9/29/94	10/7/94	9/21/94	9/22/94-9/26/94
BC-2A	9/17/94	—	9/28/94	9/20/94	9/26/94	9/29/94	10/4/94	9/21/94	9/22/94-9/26/94
BC-6 (1-2)	9/17/94	9/28/94	—	9/27/94	9/27/94	—	—	9/21/94	9/22/94-9/28/94
BC-7 (1-2)	9/17/94	9/28/94	—	9/20/94	9/26/94	—	—	9/21/94	9/22/94-9/26/94
BC-8 (1-2)	9/17/94	9/28/94	—	9/20/94	9/26/94	9/29/94	10/5/94	9/21/94	9/22/94-9/24/94
BC-9 (1-2)	9/17/94	9/28/94	—	9/20/94	9/26/94	—	—	9/21/94	9/22/94-9/24/94
BC-10 (1-2)	9/17/94	9/28/94	—	9/20/94	9/26/94	—	—	9/21/94	9/22/94-9/26/94
BC-11 (1-2)	9/17/94	9/28/94	—	9/20/94	9/26/94	9/28/94	10/5/94	9/21/94	9/22/94-9/26/94
BC-12 (1-2)	9/17/94	9/28/94	—	9/20/94	9/24/94	—	—	9/21/94	9/22/94-9/26/94
BC-D1	9/17/94	9/28/94	—	9/20/94	9/26/94	9/28/94	10/5/94	9/21/94	9/22/94-9/26/94
BC-D2	9/17/94	9/28/94	—	9/20/94	9/26/94	—	—	9/21/94	9/22/94-9/26/94

Note: Bold dates indicate missed holding times.

Table B-3. Comparison of 1-Gram and 5-Gram Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Doltan Recycle Center, Doltan, Illinois.

Samples	Acetone	Benzene	Bromo- methane	Carbon Disulfide	Chloro- benzene	Chloro- ethane	Chloro- methane	1,1-Di- chloro- ethane	1,2-Di- chloro- ethane	1,1-Di- chloro- ethene	cis-1,2-Di- chloro- ethene	trans-1,2- Dichloro- ethylene	1,2-Di- chloro- propane	trans-1,3- Dichloro- propene	Ethyl- benzene
EF-1 (18-20) 1g	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-1 (18-20) 5g	0.05	0.007	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
EF-2 (1-3) 1g	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-2 (1-3) 5g	0.056	0.007	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
EF-2 (18-20) 15g	0.13	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-2(18-20) 5g	0.05	0.007	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
EF-3 (1-3) 1g	ND(0.1)	ND(0.025)	0.083	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-3 (1-3) 5g	ND(0.1)	0.007	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
EF-3 (18-20) 1g	0.25	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-3 (18-20) 5g	0.16	0.007	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
FF-1 (1-3) 1g	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.03	ND(0.025)	ND(0.025)
FF-1 (1-3) 5g	0.052	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
FF-1 (18-20) 1g	0.39	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.03	ND(0.025)	ND(0.025)
FF-1 (18-20) 5g	0.051	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
FF-2 (1-3) 1g	ND(0.1)	0.028	0.049	ND(0.1)	ND(0.025)	ND(0.025)	0.044	ND(0.025)	ND(0.025)	0.087	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
FF-2 (1-3) 5g	0.025	0.017	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
FF-3 (1-3) 1g	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
FF-3 (1-3) 5g	0.096	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
FF-3 (18-20) 1g	0.436	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
FF-3 (18-20) 5g	0.45	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
10-1 (1-3) 1g	0.77	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.18	ND(0.025)	ND(0.025)	ND(0.025)	5.1
10-1 (1-3) 5g	ND(0.1)	0.11	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	0.0296	ND(0.005)	ND(0.005)	0.512	0.022	0.00571	ND(0.005)	0.87
10-1 (18-20) 1g	0.2	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.97
10-1 (18-20) 5g	0.172	0.069	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.0054	0.012
10-2 (1-3) 1g	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	0.79	ND(0.025)	ND(0.025)	0.49	ND(0.025)	ND(0.025)	0.44	ND(0.025)	ND(0.025)	ND(0.025)	53
10-2(1-3) 5g	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.1)	0.028	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.0155	3
10-2 (18-20) 1g	0.12	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	0.064	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.37
10-2 (18-20) 5g	0.09	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	0.009	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.034

B-13

Table 8-3. Comparison of 1-Gram and 5-Gram Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Doltan Recycle Center, Doltan, Illinois.

Samples	Acetone	Benzene	Bromo- methane	Carbon Disulfide	Chloro- benzene	Chloro- ethane	Chloro- methane	1,1-Di- chloro- ethane	1,2-Di- chloro- ethane	1,1-Di- chloro- ethene	cis-1,2-Di- chloro- ethene	trans-1,2- Dichloro- ethylene	1,2-Di- chloro- propane	trans-1,3- Dichloro- propene	Ethyl- benzene
D-2 (18-20) 1g	0.18	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
D-2 (18-20) 5g	0.19	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
W-5 (1-3) 1g	0.75	ND(0.025)	ND(0.025)	ND(0.1)	0.38	ND(0.025)	ND(0.025)	0.92	ND(0.025)	ND(0.025)	0.1	ND(0.025)	ND(0.025)	ND(0.025)	1.5
W-5 (1-3) 5g	ND(0.1)	0.029	ND(0.01)	ND(0.1)	0.041	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	0.574	0.012	ND(0.005)	0.131	0.267

B-14

Table B-3. Comparison of 1-Gram and 5-Gram Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples	2-Hex- anone	Methy- lene Chloride	2-Buta- none (MEK)	4-Methyl-2 Pen- tanone	Styrene	Tetra- chloro- ethene (PERC)	Toluene	1,1,1- Trichloro- ethane	1,1,2- Trichloro- ethane	Trichloro- ethylene	Trichloro- fluoro- methane	1,1,2- Trichloro- trifluor- ethane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)
EF-1 (18-20) 1g	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	0.14
EF-1 (18-20) 5g	0.12	ND(0.005)	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	0.012	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	0.087
EF-2 (1-3) 1g	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.025	ND(0.05)	ND(0.05)	ND(0.025)	0.33	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)
EF-2 (1-3) 5g	ND(0.05)	0.007	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)
EF-2 (18-20) 15g	ND(0.05)	0.031	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	1.4	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)
EF-2 (18-20) 5g	ND(0.05)	0.014	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)
EF-3 (1-3) 1g	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.035	ND(0.05)	ND(0.05)	ND(0.025)	0.056	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)
EF-3 (1-3) 5g	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	0.009	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)
EF-3 (18-20) 1g	ND(0.05)	0.037	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.048	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)
EF-3 (18-20) 5g	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	0.023	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)
FF-1 (1-3) 1g	ND(0.05)	0.056	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.047	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)
FF-1 (1-3) 5g	ND(0.05)	0.086	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	0.069	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)
FF-1 (18-20) 1g	ND(0.05)	0.053	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.042	ND(0.05)	ND(0.05)	ND(0.025)	0.4	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)
FF-1 (18-20) 5g	ND(0.05)	0.036	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)
FF-2 (1-3) 1g	ND(0.05)	0.031	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.042	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	0.083	ND(0.035)	ND(0.025)
FF-2 (1-3) 5g	ND(0.05)	0.024	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	0.038	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	0.16
FF-3 (1-3) 1g	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.031	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)
FF-3 (1-3) 5g	ND(0.05)	0.015	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	0.016
FF-3 (18-20) 1g	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.026	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)
FF-3 (18-20) 5g	ND(0.05)	0.033	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)
10-1 (1-3) 1g	ND(0.05)	ND(0.025)	0.25	18	0.24	ND(0.025)	151	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	26
10-1 (1-3) 5g	0.0771	0.01	0.355	2.96	0.0356	ND(0.005)	11.1	ND(0.01)	ND(0.01)	ND(0.005)	0.0027	ND(0.01)	ND(0.05)	ND(0.01)	4
10-1 (18-20) 1g	ND(0.05)	ND(0.025)	ND(0.1)	1.0	ND(0.025)	ND(0.025)	13	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	4.7
10-1 (18-20) 5g	ND(0.05)	0.0246	ND(0.1)	0.023	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	0.00671	ND(0.01)	ND(0.05)	ND(0.01)	0.0591
10-2 (1-3) 1g	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	1.2	ND(0.025)	14	0.25	ND(0.05)	ND(0.025)	ND(0.05)	9.5	ND(0.05)	ND(0.035)	179
10-2 (1-3) 5g	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)	0.061	0.0733	ND(0.005)	0.314	0.016	0.0496	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	7.96
10-2 (18-20) 1g	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	0.15	ND(0.025)	0.46	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	1.7
10-2 (18-20) 5g	ND(0.05)	0.02	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	0.029	ND(0.01)	ND(0.01)	ND(0.005)	0.0466	ND(0.01)	ND(0.05)	ND(0.01)	0.093

Table B-3. Comparison of 1-Gram and 5-Gram Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Doltan Recycle Center, Doltan, Illinois.

Samples	2-Hex- anone	Methy- lene Chloride	2-Buta- none (MEK)	4-Methyl-2 Pen- tanone	Styrene	Tetra- chloro- ethene (PERC)	Toluene	1,1,1- Trichloro- ethane	1,1,2- Trichloro- ethane	Trichloro- ethylene	Trichloro- fluoro- methane	1,1,2- Trichloro- trifluor- ethane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)
D-2 (18-20)1g	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.032	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)
D-2 (18-20) 5g	0.015	ND(0.005)	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	0.008	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)
W-5 (1-3) 1g	ND(0.05)	0.096	0.24	8.7	ND(0.025)	1.5	82	0.49	ND(0.05)	0.028	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	8.8
W-5 (1-3) 5g	0.006	ND(0.005)	0.672	1.0	0.008	0.21	11	2.94	ND(0.01)	0.119	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)

B-16

Table B-4. Soil Sample QA/QC Summary, Volatile Organic Compounds, Phase I RFI, Dolton Recycle Center, Dolton, Illinois.

Sample	Surrogate Recoveries		
	Toluene	Bromofluorobenzene	1,2-Dichloro-ethane-d4
Quality Control Limit	81-117	74-121	70-121
EF-1 (1-3)	106	422	146
EF-3 (1-3)	99	116	142
EF-3 (18-20)	92	115	159
EF-4 (1-3)	98	112	138
EF-4 (18-20)	99	117	123
FF-1 (18-20)	138	107	138
FF-2 (1-3)	118	81	134
FF-2 (18-20)	127	77	123
FF-3 (1-3)	104	99	137
FF-3 (18-20)	109	113	142
10-1 (1-3)	736	52	110
10-1 (18-20)	5476	602	113
CD-1 (1-3)	1633	180	103
10-2 (1-3)	1838	406	130
10-2 (18-20)	2220	66	102
W-5 (1-3)	1409	92	103
W-5 (18-20)	0	0	114
W-1 (1-3)	98	102	136
W-1 (18-20)	101	108	136
CD-2 (1-3)	108	91	184
CD-3 (1-3)	112	108	158
6-1 (1-3)	20	0	80
5-1 (18-20)	0	0	117
5-2 (1-3)	3482	277	102
5-2 (18-20)	1313	146	103
W-6 (1-3)	932	0	108
BD-2A (1-2)	97	165	89
BC-3 (1-2)	117	135	103
BC-4 (1-2)	106	143	104
BC-5 (1-2)	103	146	114
BC-6 (1-2)	104	152	106
BC-7 (1-2)	108	146	106
BC-8 (1-2)	103	154	107
BC-9 (1-2)	105	148	111
BC-10 (1-2)	101	152	109
PB-1 (0.5-2.5)	73	118	124
BC-D1	92	111	125
BC-D2	122	75	148

Table B-4. Soil Sample QA/QC Summary, Volatile Organic Compounds, Phase I RFI, Dolton Recycle Center, Dolton, Illinois.

<u>Matrix Spikes/Matrix Spike Duplicates</u>					
Sample	Benzene	Chlorobenzene	1,1-Dichloroethene	Toluene	Trichloroethene
Quality Control Limit (Spike Recovery)	76-127	75-110	61-145	76-125	71-120
<u>MS/MSD Recoveries (6)</u>					
W-4 (18-20) MS	112	106	110	128	110
W-4 (18-20) MSD	109	105	111	136	106
BC-2A (1-2) MSD	111	102	109	120	109
BC-2A (1-2) MSD	114	104	112	130	119
PB-1 (0.5-2.5) MS	96	96	121	101	90
PB-1 (0.5-2.5) MSD	108	110	157	112	100
Quality Control Limit (% RPD)	20	20	20	20	20
PB-1 (0.2-2.5) MS/MSD	12	13	26	11	10
Range of All Other % RPD (2 pairs)	2-3	1-3	0-3	6-8	4-9

Method Blanks and Blanks

No VOCs detected in any of (14) Method Blanks

Notes: Bold indicates recoveries above QA/QC control limits; Bold Italics indicates recoveries below QA/QC control limits.

Table B-5. Quantitation Groups, Volatile Organic Compounds, Method 8240, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene
Acetone	Bromoform	Chlorobenzene
Benzene	1,2-Dichloropropane	Ethylbenzene
Bromodichloromethane	cis-1,3-Dichloropropene	Styrene
Bromomethane	trans- 1,3-Dichloropropene	Xylenes
Carbon Disulfide	2-Hexanone	
Carbon Tetrachloride	4-Methyl-2-Pentanone	
Chloroethane	1,1,2,2-Tetrachloroethane	
Chloroform	Tetrachlorethene (PERC)	
Chloromethane	Toluene	
Dibromochloromethane	1,1,2-Trichloroethane	
1,1-Dichloroethane		
1,2-Dichloroethane		
1,1-Dichloroethene		
cis-1,2-Dichloroethene		
trans-1,2-Dichloroethene		
Methylene Chloride		
2-Butanone (MEK)		
1,1,1-Trichloroethane		
Trichloroethene		
Trichlorofluoromethane		
1,1,2-Trichlorotrifluoroethane		
Vinyl Acetate		
Vinyl Chloride		

Notes: Quantitation groups based on S-K Lab retention times for EPA method 8240.
Dichloroethane group (RT< 14 minutes); Toluene group (RT = 14-18 minutes) ;
Bromobenzene group (RT<18 minutes).

control surrogate was qualified. A total of 68 of the 2,590 VOC investigative data (2.6%) were qualified because of low surrogate recoveries.

The QC accuracy data for VOCs (matrix spike and matrix spike duplicate recovery results) are presented in Table B-4. The QC objectives for accuracy were met for all VOC matrix spike and matrix spike duplicate recovery data with the exception of toluene in matrix spike and matrix spike duplicate W-4 (18-20), toluene in matrix spike duplicate BC-2A (1-2) and 1,1-dichloroethene in matrix spike duplicate PB-1 (0.5-2.5). Toluene recoveries in matrix spike and matrix spike duplicate W-4 (18-20) and matrix spike duplicate BC-2A (1-2) were above the recovery goals. All detect data in the quantification group associated with the out of control toluene matrix spike and matrix spike duplicates were qualified. These data were deemed useable to identify a release because the qualified data provide a conservatively high estimate of the concentrations of compounds in the quantification group. Recovery of 1,1-dichloroethene was also above the recovery goal for matrix spike duplicate PB-1 (0.5-2.5). No sample results were qualified since the recovery of the two other spike compounds in this quantification group (benzene and trichloroethene) were acceptable.

Method blanks for soil VOCs samples contained no detectable contamination. Therefore no data were qualified due to contaminants in the method blanks.

Matrix spike/matrix spike duplicate reproducibilities (RPDs) are shown in Table B-4. The QC objectives for precision were met for all matrix spike and matrix spike duplicate soil VOC data with the exception of 1,1 dichloroethene in sample PB-1 (0.5-2.5). 1,1-Dichloroethene belongs to the 1,2-dichloroethene quantitation group (Table B-5). Because the other spike compounds within the 1,2-dichloroethane quantitation group (benzene and trichloroethene) were within precision limits, no data were qualified because of imprecision.

Field duplicate soil analyses for VOCs are presented in Table B-6. Taking into account the problems with matrix interference, the soil data duplicated fairly well. With respect to the detection of the VOC constituents that were identified at the site, there is agreement between duplicates in 87% of the comparisons. Discrepancies within the duplicate pairs generally involved data that were previously qualified by low or high surrogate recoveries.

Soil SVOCs. Holding times of the soil SVOC analyses are presented in Table B-2; all soil SVOC analyses were conducted within the required holding times. Soil SVOC QA/QC data on accuracy and precision are summarized in Table B-7. As described below, 144 of the 3,953 SVOC investigative data (3.6%) have been qualified because of low or high surrogate recoveries.

As shown in Table B-7, 16 soil samples had one or more surrogate recoveries that exceeded the control limits. Control limits were exceeded for the following surrogates and samples:

Table B-6. Soil VOCs Duplicate Sample Comparison, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Sample	Acetone	Benzene	Chlorobenzene	Chloroethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,3-Dichloropropene	Ethylbenzene	Methylene Chloride	2-Butanone
10-1 (1-3)	0.77	<0.025	<0.025	<0.025	<0.025	0.18	<0.025	5.1	<0.025	0.25
CD-1 (1-3)	0.37	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	11	<0.025	<0.1
10-2 (1-3)	<0.1	<0.025	0.79	<0.025	0.49	0.44	<0.025	53	<0.025	<0.1
CD-2 (1-3)	0.186	0.033	<0.025	<0.025	0.082	<0.025	<0.025	1.03	0.071	<0.1
W-5 (1-3)	0.75	<0.025	0.38	<0.025	0.92	0.1	<0.025	1.5	0.096	0.24
CD-3 (1-3)	6.92	0.101	<0.025	2.33	2.81	<0.025	0.2	0.159	0.344	3.72
W-3 (18-20)	0.21	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.1	<0.1
CD-4 (18-20)	<0.1	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.1
W-2 (4-6)	0.15	0.036	<0.025	<0.025	0.13	0.95	<0.025	0.036	0.042	<0.1
CD-5 (4-6)	0.22	0.029	<0.025	<0.025	0.056	3.6	<0.025	0.044	<0.025	<0.1
BC-2A (1-2)	<0.1	<0.005	<0.005	<0.01	<0.025	<0.005	<0.005	<0.005	<0.005	<0.1
BC-5 (1-2)	0.416	<0.025	<0.025	<0.025	<0.005	<0.025	<0.025	<0.025	0.033	<0.1

Sample	4-Methyl-2-Pentanone	Styrene	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,1,2-Trichlorotrifluoroethane	Vinyl Chloride	Xylenes (total)
10-1 (1-3)	18	0.24	<0.025	151	<0.05	<0.025	<0.05	<0.05	<0.035	26
CD-1 (1-3)	<0.05	0.47	<0.025	299	<0.05	<0.025	<0.05	<0.05	<0.035	59
10-2 (1-3)	<0.05	1.2	<0.025	14	0.25	<0.025	<0.05	9.5	<0.035	179
CD-2 (1-3)	<0.05	<0.025	0.043	0.147	<0.05	0.05	0.214	0.878	<0.035	1.07
W-5 (1-3)	8.7	<0.025	1.5	82	0.49	0.028	<0.05	<0.05	<0.035	8.8
CD-3 (1-3)	4.7	<0.025	0.163	9.56	0.733	0.157	<0.05	<0.05	<0.035	0.872
W-3 (18-20)	<0.05	<0.025	<0.025	0.032	<0.05	<0.025	<0.05	<0.05	<0.035	<0.025
CD-4 (18-20)	<0.05	<0.025	<0.025	0.029	<0.05	<0.025	<0.05	<0.05	<0.035	<0.025
W-2 (4-6)	0.14	<0.025	<0.025	0.53	<0.05	<0.025	<0.05	<0.05	1.6	0.68
CD-5 (4-6)	0.11	<0.025	<0.025	0.45	<0.05	<0.025	<0.05	<0.05	2	0.38
BC-2A (1-2)	<0.05	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.01	<0.01	<0.005
BC-5 (1-2)	<0.05	<0.025	<0.025	0.245	<0.05	<0.025	<0.05	<0.05	<0.035	<0.025

Note: Only detected compounds are listed.

Table B-7. Soil Data QA/QC Summary, Semi Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dorton Recycle Center, Dorton, Illinois.

Surrogate Recoveries					
Sample	Phenol-d5	2-Fluorophenol	Nitrobenzene-d8	2-Fluorobiphenyl	2,4,6-Trifluorophenol
QA/QC Limit (SW-846)	24-113	25-121	23-120	30-115	19-122
EF-1 (1-3)	90	112	109	113	135
EF-1 (18-20)	89	121	120	122	135
EF-3 (1-3)	95	115	125	113	119
EF-3 (18-20)	97	113	119	119	78
EF-4 (1-3)	95	113	110	117	91
FF-1 (18-20)	97	112	116	127	109
FF-2 (1-3)	100	121	111	112	181
FF-2 (18-20)	82	97	96	118	127
S-1 (1-3)	70	86	98	108	132
W-6 (1-3)	88	107	88	93	129
D-1 (1-3)	95	120	95	97	126
W-7 (18-20)	118	144	87	91	117
BC-6 (1-2)	109	24	19	22	30
PB-1 (0.5-2.5)	99	123	101	104	115
CD-4 (18-20)	96	114	109	92	132
BC-D2	0	0	0	0	0
All Others (53)	27-94	30-113	40-113	52-115	22-115

Matrix Spike/Matrix Spike Duplicates											
Sample	Phenol	2-Chlorophenol	1,4-Dichlorobenzene	N-Nitroso di-n-propylamine	1,2,4-Trichlorobenzene	4-Chloro 3-Methyl Phenol	Acenaphthene	4-Nitrophenol	2,4-Dinitro toluene	Pentachlorophenol	Pyrene
QA/QC Limit (QuAPP)	26-115	25-115	28-115	41-128	38-115	26-115	31-137	11-114	28-115	17-115	35-142
CD-3 (1-3) MS	82	58	59	60	58	73	57	35	21	71	74
CD-3 (1-3) MSD	91	84	85	84	86	106	90	48	20	104	101
BC-12 (1-2) MS	70	73	65	91	70	76	66	37	20	70	66
BC-12 (1-2) MSD	63	68	82	83	67	69	63	33	19	65	65
BC-6 (1-2) MS	105	98	91	90	81	107	87	69	70	58	96
BC-6 (1-2) MSD	117	110	103	108	91	120	96	78	78	63	108
All Others (12)	54-108	56-92	54-96	69-104	52-93	69-105	58-100	40-88	55-101	38-77	75-111

QA/QC Limit %RPD (QuAPP)	35	50	27	38	25	33	25	50	47	47	36
CD-3 (1-3) MS/MSD	38	36	37	33	37	37	44	32	3	38	31
Range of sample % RPD (8 pairs)	1-11	1-12	3-12	2-18	1-11	2-12	1-11	2-17	0-17	5-22	1-17

Method Blanks				
Sample	Diethyl phthalate	Di-n-butyl phthalate	Bis (2-Ethylhexyl) phthalate	All Others
BLANKENV91594	ND (0.66)	5.5	ND (0.66)	ND
BLANK91694	ND (0.66)	ND(0.66)	3.6	ND
BLK92094	1.9	ND (0.66)	ND (0.66)	ND
BLANK92794	ND (0.66)	ND (0.66)	1.4	ND
ALL OTHERS (4)	ALL CONSTITUENTS NON DETECT			

Note: Bold indicates data above QC limits. Bold *italics* indicate data below QC limits.

- 2,4,6-tribromophenol EF-1 (1-3), EF-1 (18-20), FF-2 (1-3), FF-2(18-20), 5-1 (1-3), W-6 (1-3), D-1 (1-3), and CD-4 (18-20);
- phenol-d₅ W-7 (18-20);
- 2-fluorophenol W-7 (18-20) and PB-1 (0.5-2.5);
- nitrobenzene-d₅ EF-3 (1-3); and
- 2-fluorobiphenyl EF-1 (18-20), EF-3 (18-20), EF-4 (1-3), FF-1(18-20), and FF-2 (18-20).

In each of these cases, all detect data for all constituents in the same quantitation group as the surrogate were qualified as being inaccurately high. This qualification does not affect the usefulness of the data for release detection which is the Phase I objective.

As shown in Table B-7, two samples had one or more surrogate recoveries less than the lower control limit. BC-6 (1-2)(soil sample from Barker Chemical No. 2 area) surrogate recoveries were low for 2-fluorophenol, nitrobenzene-d₅, and 2-fluorobiphenyl. BC-D2 (drum sample from Barker Chemical No. 2 area) surrogate recoveries were low for each surrogate. Low surrogate recoveries qualifies all non-detects associated with the individual out of control surrogate. Since both samples contained detectable levels of target compounds the low surrogate recoveries do not affect release detection (Phase I objective), but may adversely affect an accurate quantitation of certain SVOC concentrations.

The spike recovery of 2,4-dinitrotoluene in the matrix spike and matrix spike duplicate of CD-3 (1-3) and BC-12 (1-2) were lower than the acceptable limit given on Table 5-2 of the QuAPjP. All other spike recoveries (4-nitrophenol, pentachlorophenol and pyrene) within the quantitation group were within acceptable limits. Since the majority of the spike recoveries within the quantitation group were acceptable, no data were qualified.

The spike recovery for phenol and 4-chloro-3-methylphenol in the matrix spike duplicate sample BC-6 (1-2) exceeded the QC limit (Table B-7). Based upon the QA/QC acceptance Table 5-2 of the QuAPjP, only the recovery for phenol exceeded the QC limit for EPA Method 8270. The list of constituents in the same quantitation groups as phenol and 4-chloro-3-methylphenol is given in Table B-8. Due to the high spike recovery, data for all detected constituents in this group may be considered conservatively high in those samples associated with this matrix spike sample. Conservatively high concentrations do not affect release detection (Phase I objective) but may adversely affect an accurate quantitation of certain SVOC concentrations.

Di-n-butyl phthalate (9/15/94), diethylphthalate (9/20/94), and bis(2-ethylhexyl)phthalate (9/16/94 and 9/17/94) were detected in their respective method blanks as noted in Table B-7. These phthalates are common plasticizers used in the laboratory, and thus are commonly found in method blanks on other projects. All

Table B-8. Quantitation Groups, Semivolatile Organic Compounds, Phase I RFI, Safety-Kleen Doltan Recycle Center, Doltan, Illinois.

Surrogate Groups				
2-Fluorophenol	Phenol	Nitrobenzene-d8	2-Fluorobiphenyl	2,4,6-Tribromophenol
—	Phenol 1,2-Dichlorobenzene	2-Methyl phenol 4-Methyl phenol 2,4-Dimethyl phenol Isophorone Naphthalene 2-Methyl Naphthalene	—	Diethyl phthalate Phenanthrene Di-n-butyl phthalate Fluoranthene Pyrene Benzyl butyl phthalate Benzo(a) anthracene Chrysene Bis (2-ethylhexyl) phthalate Benzo(k) fluoranthene Benzo (a) pyrene

Note: Quantitation groups based on retention times. Only detected compounds listed.

phthalates that were detected in the soil samples associated with these method blanks were qualified. This resulted in the qualification of eighteen (18) phthalate data. The presence of phthalates in the method blanks may explain the apparent widespread occurrence of phthalates at the facility, based on data from the investigative samples.

The QC objectives for precision were met for all soil SVOC data, with the exception of the matrix spike/matrix spike duplicate pair CD-3(1-3). Matrix spike and matrix spike duplicate CD-3 (1-3) precision goals were exceeded for 1,2,4-trichlorobenzene, acenaphthene, 1,4-dichlorobenzene, phenol, and 4-chloro-3-methylphenol. No data were qualified because matrix spike/matrix spike duplicate pair 10-2 (1-3) which was analyzed the same day had acceptable precision.

In addition, soil SVOC data for field duplicates compared well. A comparison of duplicate results is presented in Table B-9. With respect to the detection of the SVOC constituents that were identified in the duplicate samples, there is agreement between duplicates in 77% of the comparisons. Duplicate samples 10-1 (1-3) and CD-1 (1-3) had noticeable differences, with several PAHs being detected in CD-1 (1-3). This is attributed to visible differences between the samples noted in the sampling logs, indicating that the samples were heterogeneous. Phthalates were detected in 3 duplicates but not in their corresponding pairs. Phthalate contamination was detected in the method blanks and could be responsible for the discrepancy between the samples. Phenol was detected in 10-2 (1-3) (2.8 mg/L) and CD-5 (4-6) (5.6 mg/L) but not in CD-2 (1-3) and W-2 (4-6). All other duplicate results were comparable.

Soil PCBs. Holding times for the PCB analyses are presented on Table B-2; all PCB analyses were conducted within the required holding times. The PCB QA/QC data for accuracy and precision are summarized in Table B-10. Two of the 12 PCB data (16.7%) were qualified.

As shown on Table B-10, the recovery of PCB 1260 in the matrix spike duplicate exceeded the QC limit specified in SW-846. No data were qualified due to this exceedence because the matrix spike sample did not exceed the limit.

The recovery of PCB 1016 and PCB 1260 in one of the blank spikes (9/28/94) exceeded the QC limits. All samples (BC-11 [1-2] and BC-D1) that were analyzed on 9/28/94 were qualified for this reason. No other PCB data were qualified.

Soil TCLP Metals. Holding times for the metals analyses are presented in Table B-2; all metals analyses were conducted within the required holding times. The metals QA/QC data for accuracy and precision are summarized in Table B-11. As described below, 81 of the 536 metals data (15 %) were qualified.

All initial calibration verification check samples had recoveries within required limits. None of the target constituents was detected in any of the method blanks.

Laboratory control samples were within control limits for barium, chromium, silver, arsenic, cadmium and selenium. Lead laboratory control samples extracted on

Table B-9. Soil SVOCs Duplicate Sample Comparison, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Sample	Phenol	Diethylphthalate	Di-n-butylphthalate	Fluoranthene	Pyrene	Bis(2-ethylhexyl)phthalate	Benzo(k)fluoranthene
10-1 (1-3) ¹	3.0	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
CD-1 (1-3) ¹	<3.3	<3.3	<3.3	8.2	7.9	17.4	8.8
10-2 (1-3)	2.8	<0.66	<0.66	<0.66	<0.66	7.5	<0.66
CD-2 (1-3)	<0.66	<0.66	1.6	<0.66	<0.66	<0.66	<0.66
W-5 (1-3)	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
CD-3 (1-3)	<0.66	<0.66	3.7	<0.66	<0.66	<0.66	<0.66
W-3 (18-20)	7.2	2.1	<0.66	<0.66	<0.66	<0.66	<0.66
CD-4 (18-20)	4.5	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
W-2 (4-6)	<0.66	1.7	<0.66	<0.66	<0.66	<0.66	<0.66
CD-5 (4-6)	5.6	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
BC-2A (1-2)	<0.66	<0.66	5.1	<0.66	<0.66	<0.66	<0.66
BC-5 (1-2)	<0.66	<0.66	5.0	<0.66	<0.66	<0.66	<0.66

Notes: Only detected compounds are listed.

¹Physical description indicated heterogeneity (streaking) in this sample and duplicate.

**Table B-10. Polychlorinated Biphenyl Sample QA/QC Summary, Phase I RFI,
Safety-Kleen dolton Recycle Center, Dolton, Illinois.**

		<u>Matrix Spikes/Matrix Spike Duplicates</u>	
Quality Control Limit (SW-846)		50-114	8-127
<u>Sample</u>	<u>Date Prepared</u>	<u>PCB 1016</u>	<u>PCB 1260</u>
BC-2A (1-2)	9/19/94	66.6/102	98/ 168.6
<u>Blank Spikes</u>			
<u>Sample</u>	<u>Date Prepared</u>	<u>PCB 1016</u>	<u>PCB 1260</u>
Blank Spike	9/19/94	54.7	57.3
Blank Spike	9/28/94	150	139
Blank Spike	9/29/94	91.2	105.4
<u>Method Blanks</u>			
<u>Sample</u>	<u>Date Prepared</u>	<u>PCB 1016</u>	<u>PCB 1260</u>
Method Blank	9/19/94	N.D.	N.D.
Method Blank	9/28/94	N.D.	N.D.

Notes: **Bold indicates Data above QA/QC Limits.**

Table B-11. Soil Data QA/QC Summary, Metals, Phase I RFI, Safety-Kleen/Dolton Recycle Center, Dolton, Illinois.

	Ba	Cr	Hg	As	Cd	Pb	Se	Ag
Quality Control Limit Check Samples	90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110
Range (Number of samples in parentheses)	98-101 (7)	97-101 (7)	96-104 (6)	90-102 (8)	91-101 (11)	94-107 (16)	100-110 (11)	98-101 (7)
Quality Control Limit Laboratory Control Samples	80-120	80-120	-1-	80-120	80-120	80-120	80-120	80-120
LCS range (Number of samples in parentheses)	90-97 (8)	87-95 (8)	-1-	94-100 (6)	82-99 (8)	85-124 ² (8)	86-106 (6)	89-98 (8)

B-28

		Matrix Spike/Matrix Spike Duplicate							
Quality Control Limit MS/MSD Recoveries		80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120
EF-2 (1-3)	5	87/87	84/85	99/103	114/114	89/91	84/101	90/80	61/63
EF-3 (1-3)	7	85/85	87/86	96/100	106/107	94/93	94/88	74/74	71/72
FF-1 (18-20)	14	88/88	87/86	-	96/97	93/88	102/94	88/90	62/63
FF-2 (1-3)	15	86/88	89/91	98/102	94/100	93/95	74/78	87/81	76/80
FF-3 (1-3)	17	89/88	85/84	98/98	110/108	89/90	104/89	84/80	69/69
W-5 (1-3)	24	83/83	85/93	96/99	104/103	92/91	89/81	69/92	72/74
6-1 (18-20)	31	90/90	90/91	97/97	101/102	85/86	88/91	88/78	71/70
5-1 (1-3)	32	88/86	88/82	98/95	105/106	93/92	83/81	87/86	77/68
D-1 (1-3)	40	84/85	88/86	-	113/109	95/99	81/89	73/76	77/71
D-3 (4-6)	42	88/88	81/78	95/96	107/105	95/93	89/93	81/82	69/67
W-2 (4-6)	48	88/89	82/82	99/98	105/106	92/97	92/108	87/90	60/65
BC-6 (1-2)	54	82/79	89/89	-	89/91	15/23	84/94	91/90	72/70
BC-7 (1-2)	55	86/85	96/86	97/97	103/104	98/114	90/96	79/76	67/66

Table B-11. Soil Data: QA/QC Summary, Metals, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

	Ba	Cr	Hg	As	Cd	Pb	Se	Ag
Sample Spike Recovery Summary [# of spiked samples in ()]	79-90 (26)	78-96 (26)	95-103 (22)	89-114 (26)	15-114 (26)	74-108 (26)	73-91 (26)	60-80 (26)
Quality Control Limit MS/MSD %RPD	20	20	20	20	20	20	20	20
% RPD [# of pairs in ()]	0-4 (14)	0-11 (14)	0-5 (11)	0-6 (13)	1-15 (13)	2-18 (13)	0-12 (13)	1-6 (14)
<u>Method Blanks</u>								
Method Blank Results (Detection Limit in Parentheses)	ND(0.02)	ND(0.04)	ND (0.0002)	ND (0.0125)	ND(0.0004)	ND(0.0031)	ND(0.0093)	ND(0.03)
Number of Method Blanks	8	8	6	5	4	6	6	8

Notes: ¹ LCS and initial calibration check samples are the same for Mercury
² Two LCS results out of range (123, 124)
Bold indicates data higher than QC limit
Bold italics indicates data lower than QC limit

B-29

9/27/94 had recoveries greater than the acceptable limit of 120%. This would indicate that if detectable quantities of lead were found in samples extracted on that date, reported quantities would be overstated. None of the soil samples extracted on that date had detectable quantities of lead, so no data were qualified for lead.

All matrix spike/matrix spike duplicate pairs met precision goals for metals analysis of TCLP soils. Matrix spike/matrix spike duplicate results for barium, chromium, mercury and arsenic also met all accuracy requirements given on Table 5-2 of the QuAPjP.

All matrix spike and matrix spike duplicate recoveries for silver were less than the accuracy goals except for one. Therefore, all non-detect silver data were qualified. Silver matrix spike and matrix spike duplicate recoveries were impacted by the presence of a matrix interference. Interference was checked by:

- Reextracting spiked soils to show that similar recoveries occurred; and
- Spiking the soil extracts immediately prior to analysis.

Both re-extracted soils and soils spiked prior to analysis showed low silver recoveries indicating a matrix effect. The matrix spike/matrix spike duplicates for silver were spiked at the detection limit (0.05 mg/Kg) and had recoveries in the range of 57 to 77%. This indicates that though the non-detect results are qualified, had elevated levels of silver (>0.09 mg/Kg) been present, it would have been detected. For this reason the silver data were deemed usable for this report.

Some data were qualified due to low recoveries on matrix spikes and or matrix spike duplicates for selenium, lead and cadmium. Seven samples were qualified for selenium, and one sample for cadmium. Selenium was not detected in any of the samples, and is not expected to be present at the site. Therefore, qualification of the selenium data does not affect the objective of release detection. Cadmium was detected in the qualified sample (BC-6(1-2)) and in other adjacent samples in which the cadmium data was not qualified. Therefore, the qualification of the Cadmium data at BC-6(1-2) does not affect the usefulness of the data for release detection (the Phase I objective).

Results of duplicate samples for soil TCLP metals are presented in Table B-12, and indicate excellent precision. Barium was detected in two of the duplicate pairs. FF-3 contained 0.0307 mg/L barium and its duplicate, CD-7 contained 0.0321 mg/L. Sample W-4 contained 0.0605 mg/L barium and its duplicate, CD-8 contained 0.0607 mg/L. All other metals were non-detect.

Water VOCs. All water VOC samples were analyzed within the required 14 day holding time. Holding times for these samples are presented in Table B-13. Water VOC accuracy and precision data are summarized in Table B-14. As described below, a total of 38 of the 851 water VOC data (4.4%) were qualified.

Table B-12. TCLP Metals Duplicate Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Metals in TCLP Leachate Duplicate Comparison

Sample	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
10-1 (1-3)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05
CD-1 (1-3)	<0.05	<2	<0.005	<0.1	0.0282	<0.002	<0.05	<0.05
10-2 (1-3)	<0.05	<2	<0.005	<0.1	0.023	<0.002	<0.05	<0.05
CD-2 (1-3)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05
W-5 (1-3)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05
CD-3 (1-3)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05
W-3 (18-20)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05
CD-4 (18-20)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05
W-2 (4-6)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05
CD-5 (4-6)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05
BC-2A (1-2)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05
BC-5 (1-2)	<0.05	<2	<0.005	<0.1	<0.0075	<0.002	<0.05	<0.05

Table B-13. Ground-Water Sample Holding Times, Phase I RFI, Safety-Kleen Doltan Recycle Center, Doltan, Illinois.

Samples	Sample Collection Date	VOC Analysis Date (1 gram)	SVOC Extraction Date	SVOC Analysis Date	Metals Analysis Dates
<u>SW-846 Limit</u>		14 days	14 days	40 days	6 months
<u>East Field</u>					
EF-1	9/20/94	10/1/94	NA	—	NA
EF-2	NS	—	—	—	—
EF-3	9/20/94	10/4/94	9/22/94	9/30/94	NA
EF-4	9/19/94	10/1/94	9/21/94	9/29/94	9/29/94-10/6/94
<u>Former Southeast Field</u>					
FF-1	9/19/94	10/1/94	9/21/94	9/29/94	NA
FF-2	9/19/94	10/1/94	9/21/94	9/29/94	9/29/94-10/6/94
FF-3	9/19/94	10/1/94	9/21/94	9/29/94	9/29/94-10/6/94
<u>Truck Station 10</u>					
10-1	9/21/94	10/4/94	9/23/94	10/5/94	9/29/94-10/6/94
10-2	NS	—	—	—	—
<u>Former Tank Farm D/Truck Station No. 3</u>					
D-1	9/20/94	10/1/94	9/22/94	9/30/94	NA
D-2	9/20/94	10/3/94	9/22/94	9/30/94	9/29/94-10/6/94
D-3	9/19/94	10/1/94	9/21/94	9/29/94	9/29/94-10/6/94
<u>West Tank Farm/Driveway to Facility/Process Building</u>					
W-1	9/21/94	10/3/94	9/23/94	10/3/94	NA
W-2	9/20/94	10/3/94	9/22/94	9/29/94	NA
W-3	9/20/94	10/3/94	9/22/94	9/30/94	9/29/94-10/6/94
W-4	9/20/94	10/4/94	9/22/94	9/30/94	9/29/94-10/6/94
W-5	9/21/94	10/4/94	9/23/94	9/29/94	9/29/94-10/6/94
W-6	9/20/94	10/4/94	9/23/94	10/5/94	NA
W-7	9/21/94	10/4/94	9/20/94	9/27/94	NA
<u>Truck Station No. 5/North Warehouse Pad</u>					
5-1	9/21/94	10/3/94	9/23/94	10/3/94	NA
5-2	9/21/94	10/3/94	NA	—	NA
5-3	9/20/94	10/3/94	9/22/94	9/29/94	NA
6-1	9/21/94	10/3/94	9/23/94	10/3/94	9/29/94-10/6/94
<u>Field Quality Control Samples</u>					
EB-1	9/20/94	10/1/94	9/21/94	9/29/94	9/29/94-10/6/94
EB-2	9/21/94	10/4/94	9/23/94	9/29/94	9/29/94-10/6/94
FB-1	9/20/94	10/1/94	9/21/94	9/30/94	9/29/94-10/6/94
FB-2	9/21/94	10/4/94	9/23/94	9/29/94	9/29/94-10/6/94
CD-7	9/19/94	10/1/94	9/21/94	9/29/94	9/29/94-10/6/94
CD-8	9/20/94	10/3/94	9/22/94	9/30/94	9/29/94-10/7/94

NA = Not Analyzed; NS = Not Sampled due to Insufficient Water

Table B-14. Ground-Water Sample QA/QC Summary, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Surrogate Recoveries

Sample	Sample Type	Toluene	Bromofluoro- benzene	1,2-Dichloroethane d4
Quality Control Limit		88-110	86-115	76-114
FF-2		<i>0*</i>	102	110
W-1		<i>60</i>	111	83
Range of All Other Samples (25)		94-103	94-105	80-109

Notes: All Constituents within Quantitation Group Qualified.
Bold Italics Indicates Recovery Below Limits.

Matrix Spikes/Matrix Spike Duplicates

Sample	Benzene	Chlorobenzene	1,1-Dichloroethene	Toluene	Trichloroethene
Quality Control Limit (Spike Recovery)	76-127	75-110	61-145	76-125	71-120
MS/MSD Recoveries (6)					
10-1	144/134	94/78	97/85	2520/2360	93/80
All others (2)	100-104	101-106	88-103	107-117	105-112

Notes: All Detect Constituents within Quantitation Group Qualified.
Bold Indicates Recovery Above Limits.

Quality Control Limit (% RPD)	20	20	20	20	20
Range of All % RPD (3 pairs)	0-7	1-19	2-13	0-8	2-16

Method Blanks

Acetone only (0.0112 mg/L) detected in (1) Method Blank
 No VOCs detected in (2) other Method Blanks

Field Blanks

Toluene detected in 9/21/94 Field Blank, 9/20/94 Field Blank Clean

Note: All Detected Toluene from Samples Collected 9/21/94 Qualified.

Equipment Blanks

Toluene detected in 9/21/94 Equipment Blank, 9/20/94 Equipment Blank Clean

Note: All Detected Toluene from Samples Collected 9/21/94 Qualified. Same Sample Group as Qualified for Field Blanks.

Surrogate recoveries of toluene-d₈ were below recovery goals for two samples. Those compounds included in the quantification group associated with toluene-d₈ for samples FF-2 and W-1 were qualified as a result. A total of 20 of the 851 water VOC investigative data (2%) were qualified for out of control surrogate recoveries.

All matrix spike/matrix spike duplicates for water VOCs met precision goals. Matrix spike/matrix spike duplicate recoveries of benzene and toluene were greater than the limits for acceptable accuracy for sample 10-1 analyzed on 10/4/94. Sample results for detected compounds within the toluene quantification group were qualified. Because these results may provide an inaccurately high estimate of constituent concentrations, the high matrix spike and matrix spike duplicate recoveries do not affect release detection (the Phase I objective). No sample data were qualified as a result of the high benzene recovery, since two other spiked compounds within the same quantification group had acceptable recoveries.

Acetone was detected within the method blank analyzed on 10/1/94 at a concentration of 0.0112 mg/L. For those samples analyzed on that date, acetone was detected in association with other facility-related constituents such as chlorinated solvents. This suggests that acetone is not an artifact but is present in the samples. For this reason no acetone data were qualified. In any case, the acetone concentrations in ground water samples associated with this method blank provide at least a conservatively high estimate of actual acetone concentrations in ground water. This does not affect release detection (the Phase I objective).

Toluene was detected in one of the field water blanks and one of the field equipment blanks. All toluene detections have therefore been qualified. These toluene data do provide a conservatively high estimate of actual toluene concentrations in ground water. This does not affect release detection (the Phase I objective).

Results of the duplicate samples for water VOCs are presented on Table B-15. In duplicates FF-3 and CD-7, each compound detected was found in each sample and at comparable levels. W-4 contained methylene chloride at a concentration near the detection limit; methylene chloride was not detected in the duplicate CD-8. Toluene was detected in both samples in the same duplicate pair, (W-4 and CD-8), but the reported concentration differed by an order of magnitude (0.016 and 0.14 mg/L respectively).

Water SVOCs. All water SVOC samples were analyzed within the holding times required by EPA Method 8270 as presented in Table B-3. QA/QC data for water samples analyzed for SVOCs is presented in Table B-16. No water SVOC data were qualified.

All surrogate recoveries for the water SVOC samples met the recovery goals. Due to the limited quantities of water samples, matrix spikes and matrix spike duplicates were prepared using laboratory water. Matrix spikes/matrix spike duplicates prepared in this fashion were all within accuracy and precision limits. Duplicate field samples and blanks were all below detection limit for each constituent. No SVOCs were detected in any of the method blanks.

Table B-15. Water VOCs Duplicate Sample Comparison, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Sample	Acetone	Chloroethane	1,1-Dichloroethane	Methylene Chloride	Toluene
FF-3	<0.1	0.024	0.065	<0.005	0.0063
CD-7	<0.1	0.026	0.059	<0.005	0.01
W-4	<0.1	<0.01	0.035	0.0071	0.016
CD-8	<0.1	<0.01	0.039	<0.005	0.14

Note: All Other Constituents Not Detected

Table B-16. Ground-Water Data QA/QC Summary, Semi Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Sample	<u>Surrogate Recoveries</u>				
	Phenol-d5	2-Fluorophenol	Nitrobenzene-d8	2-Fluorobiphenyl	2,4,6-Tribromophenol
Quality Control Limit (SW-846)	10-94	21-100	35-114	43-116	10-123
All Samples (24)	23-51	43-73	50-92	43-76	60-118

Matrix Spike/Matrix Spike Duplicates

None analyzed due to insufficient sample. See Case Narrative

Method Blanks

No SVOC Constituents detected in any of (3) Method Blanks

Note: Bold indicates data outside QC limits.

Water Dissolved Metals. All dissolved metals in water were analyzed within holding times as indicated in Table B-13. The accuracy and precision quality control data for dissolved metals are summarized in Table B-17.

All calibration verification samples were within accuracy limits for the given methods. None of the target constituents were detected in the method (calibration) blanks. All matrix spike/matrix spike duplicate recoveries were within the accuracy and precision limits. Results of the duplicate sample analyses is contained on Table B-18. All duplicate water samples were non-detect.

Overall Project Data Evaluation

Overall project data evaluation was conducted using the criteria of completeness, representativeness and comparability. This section describes this overall project evaluation.

Overall Completeness of Soil Quality Data

Completeness is defined as the percentage of unqualified environmental data. Data are qualified if they do not satisfy the QC limits for accuracy and precision that have been established in the QuAPjP. Some data were qualified on the basis of more than one criteria. A list of all qualified soil data is presented in Table B-19. Summary tables indicating which soil quality data have been qualified are presented in Appendix F. Overall soil data qualifications are summarized below:

- 1,023 of 2,479 soil VOC data (41.3%);
- 123 of 3,953 soil SVOC data (3.1%);
- 2 of 12 soil PCB data (16.7%); and
- 73 of 536 TCLP metals data (13.6%).

The overall completeness for the soil quality data is 82.5%. This does not meet the QC goal for 95% completeness. Soil VOC samples which exceeded holding times accounted resulted in qualification of 13.3% of the data. As discussed previously, VOC holding times were exceeded by four days or less, and this minor excursion is expected not to impact the usefulness of the data. Some of the data (1.0%) was qualified as conservatively high. Only 3.2% of the data were qualified as conservatively low. Therefore, the data are sufficient for achieving the Phase I objectives (release detection). As described below, the utility of the soil quality data for achieving the Phase I objective is supported by comparisons to previous data from the site. Releases to soil were detected at every SWMU where previous data had indicated the presence of releases.

Table B-17. Ground-Water Data QA/QC Summary, Dissolved Metals, Phase I RFI, Safety-Kleen Corp. Recycle Center, Dolton, Illinois.

	Ba	Cr	Hg	As	Cd	Pb	Se	Ag
QC Check Samples (acceptable range)	90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110
Range (Number of samples in parentheses)	98 (1)	97 (17)	103 (1)	98-100 (2)	96-101 (3)	97-101 (3)	100-102 (3)	98 (1)
Matrix Spike/Matrix Spike Duplicate								
MS/MSD								
- Acceptable Recovery Range	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120
Sample Spike Recovery Summary [# of spiked samples in ()]	94-97 (2)	88-95 (2)	92-94 (2)	96-112 (2)	87-116 (2)	84-107 (2)	82-97 (2)	80-98 (2)
- Acceptable % RPD Range	20	20	20	20	20	20	20	20
% RPD [# of pairs in ()]	1-1 (2)	0-2 (2)	4 (1)	3-5 (2)	2-9 (2)	2-2 (2)	0-3 (2)	4-5 (2)
Method Blanks								
Method Blank Results (Detection Limit in Parentheses)	--	--	ND (0.0002)	--	--	--	--	--
Number of Method Blanks			1					

Notes: Bold indicates data out of QC limit
Laboratory Control Samples and Method Blanks NOT analyzed for water analysis since no extraction involved.
Calibration blanks were analyzed at a frequency of one per 10 samples.
Analyses were only performed if calibration blanks were non-detect
A Method Blank is performed as part of Method 7470 (Hg) since an extraction is performed

Table B-18. Dissolved Metals Duplicate Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Dissolved Metals Duplicate Comparison

Sample	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
FF-3	<0.025	0.0307	<0.0008	<0.04	<0.006	<0.0008	<0.00903	<0.03
CD-7	<0.025	0.0321	<0.0008	<0.04	<0.006	<0.0008	<0.00903	<0.03
W-4	<0.025	0.0605	<0.0008	<0.04	<0.006	<0.0008	<0.00903	<0.03
CD-8	<0.025	0.0607	<0.0008	<0.04	<0.006	<0.0008	<0.00903	<0.03

Table B-19. Summary of Qualified Data, Soil Quality Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

1a. VOC Data Qualified due to Missed Holding Times

<u>Sample</u>	<u>Constituents</u>
EF-1 (1-3)	All (37)
EF-1 (18-20)	All (37)
EF-2 (1-3)	All (37)
EF-2 (18-20)	All (37)
EF-3 (1-3)	All (37)
EF-3 (18-20)	All (37)
EF-4 (1-3)	All (37)
EF-4 (18-20)	All (37)
D-2 (1-3)	All (37)
D-2 (18-20)	All (37)
FF-1 (1-3)	All (37)
FF-3 (1-3)	All (37)
FF-3 (18-20)	All (37)
10-1 (1-3)	All (37)
10-1 (18-20)	All (37)
CD-1 (1-3)	All (37)
10-2 (1-3)	All (37)
10-2 (18-20)	All (37)
W-5 (1-3)	All (37)
W-5 (18-20)	All (37)
W-1 (1-3)	All (37)
W-1 (18-20)	All (37)
CD-2 (1-3)	All (37)
CD-3 (1-3)	All (37)

1b. VOC Data Qualified due to High surrogate recovery of Toluene

<u>Sample</u>	<u>Constituents</u>
FF-1 (18-20)	12DCP(0.03),T(0.042)
FF-2 (1-3)	T(0.042)
FF-2 (18-20)	T(0.008)
10-1 (1-3)	4M2P(18),T(151)
10-1 (18-20)	4M2P(1),T(13)
CD-1 (1-3)	T(299)
10-2 (1-3)	T(14)
10-2 (18-20)	T(0.46)
W-5 (1-3)	4M2P(8.7),PCE(1.5),T(8.2)
5-2 (1-3)	T(0.12)
5-2 (18-20)	T(0.6)
W-6 (1-3)	T(0.15)
BC-D2	2H(28),4M2P(0.44),T(0.41)

Note: Detect Data Qualified for Constituents in Quantitation Group.

Table B-19. Summary of Qualified Data, Soil Quality Data, Phase I RFI, Safety-Kleen Dorton Recycle Center, Dorton, Illinois.

1c. VOC Data Qualified Due to Low Surrogate Recovery of Toluene

<u>Sample</u>	<u>Constituents</u>
W-5 (18-20)	All (10)
5-1 (18-20)	All (10)
6-1 (1-3)	All (10)
PB-1 (0.5 -2.5)	All (10)

Note: Detect and Non-detect Data Qualified for Constituents in Quantitation Group.

1d. VOC Data Qualified Due to High Surrogate Recovery of Bromofluorobenzene

<u>Sample</u>	<u>Constituents</u>
EF-1 (1-3)	EB(10.5),X(22.3)
10-1 (18-20)	EB(0.97),X(4.7)
CD-1 (1-3)	EB(11),S(0.47),X(59)
10-2 (1-3)	EB(53),S(1.2),X(179)
5-2 (1-3)	None
5-2 (18-20)	None
BC-2A (1-2)	None
BC-3 (1-2)	None
BC-4 (1-2)	None
BC-5 (1-2)	None
BC-6 (1-2)	EB(0.036),X(0.036)
BC-7 (1-2)	None
BC-8 (1-2)	EB(0.246),X(0.531)
BC-9 (1-2)	None
BC-10 (1-2)	None

Note: Detect data Qualified for Constituents in Quantitation Group.

1e. VOC Data Qualified due to low surrogate recovery of Bromofluorobenzene

<u>Sample</u>	<u>Constituents</u>
FF-1 (18-20)	All (4)
10-1 (1-3)	All (4)
10-2 (18-20)	All (4)
W-5 (18-20)	All (4)
6-1 (1-3)	All (4)
5-1 (18-20)	All (4)
W-6 (1-3)	All (4)

Note: Non Detect and Detect Data Qualified for Constituents in Quantitation Group.

Table B-19. Summary of Qualified Data, Soil Quality Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

1f. VOC Data Qualified Due to High Recovery of Surrogate 1,2 DCA

<u>Sample</u>	<u>Constituents</u>
EF-1 (1-3)	A(14),B(0.24),CDS(0.166),11DCA(6.12),12DCA(0.387),11DCE(0.642), c12DCE(11.6),112DCE(0.061),MC(0.027),MEK(22.9),111TCA(10.6), TCE(8.54),VA(0.292)
EF-3 (1-3)	BM(0.083),TCFM(0.056)
EF-3 (18-20)	A(0.25),MC(0.037)
EF-4 (1-3)	MC(0.037)
EF-4 (18-20)	A(4.4),MEK(0.54)
FF-2 (1-3)	B(0.026),BM(0.049),CM(0.044),11DCE(0.087)MC(0.031),VA(0.083)
FF-2 (18-20)	MC(0.018),TCTFE(0.034)
FF-3 (1-3)	None
FF-3 (18-20)	A(0.436)
10-2 (1-3)	11DCA(0.49),c12DCE(0.44),111TCA(0.25),TCTFE(9.5)
W-1 (1-3)	A(0.328)
W-1 (18-20)	MC(0.068),TCFM(0.34)
CD-2 (1-3)	A(0.186),B(0.033),11DCA(0.082),MC(0.071),TCE(0.05),TCFM(0.214), TCTFE(0.878)
CD-3 (1-3)	A(6.92),B(0.101),CE(2.33),11DCA(2.81),MC(0.344),MEK(3.72), 111TCA(0.733),TCE(0.157)
PB-1 (0.5-2.5)	None
BC-D1	None
BC-D2	A(0.54),MEK(0.2)

1g. VOC Data Qualified Due to High Recovery of Matrix Spike Toluene

<u>Sample</u>	<u>Constituents</u>
EF-1 (1-3)	113DCP(0.184),4M2P(10.4),PCE(11),T(12.4),112TCA(1.64)
EF-3 (1-3)	T(0.035)
EF-3 (18-20)	T(0.048)
EF-4 (1-3)	T(0.03)
D-2 (1-3)	PCE(0.303),T(0.421)
D-2 (18-20)	T(0.032)
FF-1 (1-3)	12DCP(0.03),T(0.047)
FF-1 (18-20)	12DCP(0.03),T(0.042)
FF-2 (1-3)	T(0.042)
FF-2 (18-20)	T(0.008)
10-1 (1-3)	4M2P(18),T(151)
10-1 (18-20)	4M2P(1.0),T(13)
CD-1 (1-3)	T(299)
10-2 (1-3)	T(14)
10-2 (18-20)	T(0.46)
W-5 (1-3)	4M2P(8.7),PCE(1.5),T(82)
6-1 (1-3)	T(0.11)

Table B-19. Summary of Qualified Data, Soil Quality Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

1g. VOC Data Qualified Due to High Recovery of Matrix Spike Toluene (continued)

5-2 (1-3)	T(0.12)
5-2 (18-20)	T(0.6)
W-4 (18-20)	T(0.028)
W-6 (1-3)	T(0.15)
D-1 (1-3)	T(1.4)
D-1 (18-20)	T(0.045)
W-3 (4-6)	PCE(0.035),T(0.036)
W-3 (18-20)	T(0.032)
W-2 (4-6)	4M2P(0.1),T(0.53)
BC-3 (1-2)	2H(0.089),T(0.048)
BC-4 (1-2)	PCE(0.406),T(0.067)
BC-5 (1-2)	T(0.245)
BC-6 (1-2)	PCE(0.108),T(0.046)
BC-7 (1-2)	T(0.041)
BC-8 (1-2)	PCE(0.147),T(0.041),112TCA(0.281)
BC-9 (1-2)	PCE(0.66),T(0.05)
BC-10 (1-2)	PCE(0.349)
BC-11 (1-2)	PCE(0.086),T(0.039),112TCA(0.1)
BC-12 (1-2)	T(0.029)
BC-D1	T(0.028)
BC-D2	2H(28),4M2P(0.4),T(0.41)

Note: Detect Data Qualified for Constituents in Quantitation Group.

2a. SVOC Data Qualified Due to Low Surrogate Recoveries

<u>Sample</u>	<u>Constituents</u>
BC-6 (1-2)	All (59)
BC-D2	All (59)

Note: All Detect and Non-detect Data Qualified

2b. SVOC Data Qualified due to High Phenol Recoveries

<u>Sample</u>	<u>Constituents</u>
W-7 (18-20)	P(8.3)

Note: Detect Data Qualified for Constituents in Quantitation Group.

2c. SVOC Data Qualified Due to High Surrogate Recovery of Nitrobenzene-d5

<u>Sample</u>	<u>Constituents</u>
EF-3 (1-3)	none

Note: Detect Data Qualified for Constituents in Quantitation Group.

Table B-19. Summary of Qualified Data, Soil Quality Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

2d. SVOC Data Qualified Due to High Surrogate Recovery of 2,4,6-Tribromophenol

<u>Sample</u>	<u>Constituents</u>
EF-1 (1-3)	Dnbp (1.0), b2Ehp (2.4)
EF-1 (18-20)	Dnbp (1.8)
FF-2 (1-3)	b2Ehp (3.5)
FF-2 (18-20)	none
5-1(1-3)	Dnbp (2.2)
W-6 (1-3)	Dnbp (5.7)
D-1 (1-3)	Dnbp (2.7)
CD-4 (18-20)	none

Note: Detect Data Qualified for Constituents in Quantitation Group.

2e. SVOC Data Qualified Due to High Surrogate Recovery of 2-Fluorobiphenyl

<u>Sample</u>	<u>Constituents</u>
EF-1 (18-20)	none
EF-3 (18-20)	none
EF-4 (1-3)	none
FF-1 (18-20)	none
FF-2 (18-20)	none

Note: Detect Data Qualified for Constituents in Quantitation Group.

2f. SVOC Data Qualified Due to High Surrogate Recovery of 2-Fluorophenol

<u>Sample</u>	<u>Constituents</u>
W-7 (18-20)	none
PB-1 (0.5-2.5)	none

Note: Detect Data Qualified for Constituents in Quantitation Group.

2g. SVOC Data Qualified Due to High Surrogate Recovery of Nitrobenzene-d5

EF-3 (1-3)	none
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Note: Detect Data Qualified for Constituents in Quantitation Group.

2h. SVOC Data Qualified Due to Low matrix Spike Recovery of 2,4-Dinitrotoluene

Note: None, recoveries of 3 other compounds within the same quantitation group included in the MS/MSD were acceptable.

Table B-19. Summary of Qualified Data, Soil Quality Data, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

2i. SVOC Data Qualified Due to MS/MSD %RPD Exceedence

Note: None, Other MS/MSD analyzed on the same day had acceptable precision

2j. SVOC Data Qualified Due to detection of Dnbp, Dep or b2Ehp in Method Blanks

<u>Sample</u>	<u>Constituents</u>
EF-1 (1-3)	Dnbp(1.0)
EF-1 (18-20)	Dnbp(1.8)
EF-2 (1-3)	Dnbp(2.3)
EF-3 (18-20)	Dnbp(4.4)
EF-4 (18-20)	Dnbp(4.2)
D-2 (1-3)	Dnbp(1.2)
D-2 (18-20)	Dnbp(2.0)
FF-1 (1-3)	Dnbp(1.4)
FF-1 (18-20)	b2Ehp(3.4)
FF-2 (1-3)	b2Ehp(3.5)
W-7 (3.5-5.5)	Dep(1.9)
W-7(18-20)	Dep(1.2)
W-3 (4-6)	Dep(1.3)
W-3 (18-20)	Dep(2.1)
W-2 (4-6)	Dep(1.7)
W-2 (18-20)	Dep(1.6)
BC-6 (1-2)	b2Ehp(56.1)
BC-12 (1-2)	Dep(1.6)
5-3 (4-6)	Dep(1.8)
5-3 (18-20)	Dep(1.4)

3a. TCLP Metals Data Qualified Due to Low Silver MS/MSD recoveries

All Silver Analyses

3b. TCLP Metals Data Qualified Due to Low Cadmium MS/MSD Recoveries

<u>Sample</u>	<u>Constituents</u>
BC-6 (1-2)	Cadmium(0.067)

3c. TCLP Metals Data Qualified Due to Low Selenium MS/MSD Recoveries

EF-3 (1-3)	Selenium(<0.05)
D-1 (1-3)	Selenium(<0.05)

Overall Completeness of Ground-water Quality Data

Though ground water was not the primary medium of the Phase I investigation, S-K voluntarily collected ground-water samples and evaluated the accuracy and precision (and completeness) of the ground-water data based on the criteria established in the QuAPjP. Ground-water data qualifications are summarized below:

- 38 of 851 water VOC data (2.9%);
- 0 of 1,180 water SVOC data (0%);
- 0 of 96 dissolved metals data (0%).

The overall completeness for the ground-water quality data is 98.3%. This level of completeness exceeds the QC goal of 95%, indicating that the quality of the ground-water data are of excellent quality. A list of all qualified ground-water data is presented in Table B-20. Summary tables showing ground-water data and indicating which data were qualified are presented in Appendix G.

The patterns of releases indicated by the shallow ground-water data compare favorably with those indicated by the soil quality data (both qualified and unqualified); thus the ground-water data support the utility of the qualified soil quality data.

Representativeness

Representativeness expresses the degree to which data accurately and precisely represent an environmental condition. Representativeness is a qualitative parameter which is dependent upon the proper design of the sampling program and proper laboratory protocol.

The soil and ground-water sampling network was designed to provide data representative of worst-case site conditions at each solid waste management unit. During development of this network, consideration was given to areas of known releases and areas where experience from similar sites indicates releases of hazardous waste and hazardous constituents are most likely to occur. The rationale of the sampling network, discussed in detail in Chapter 4, received close scrutiny from technical professionals at IEPA and Safety-Kleen, and revisions were made in the final copies to reflect their comments. This insured proper design of the sampling and analysis program.

Representativeness can be assessed by comparing the general pattern of constituent detections with previous data from the site. As described in the text of this RFI report, a similar pattern of soil and ground-water impacts is indicated by several independent data sources collected during and prior to the Phase I RFI. Therefore the soil and ground-water data presented in this report provide a representative depiction of the distribution of most constituents at this site.

Table B-20. Summary of Qualified Data, Water Quality Data, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

1a. VOC Data Qualified due to Low Toluene-d8 Surrogate Recovery

Sample	Constituents
FF-2	All within Quantitation Group (10)
W-1	All within Quantitation Group (10)

1b. VOC Data Qualified Due to High Toluene MS/MSD Recovery

Sample	Constituents
W-4	T(0.016)
EF-3	T(0.011)
W-5	2H(0.056),4M2P(3.8),T(0.23)
W-6	T(0.0058)
EB-2	T(0.059)
FB-2	T(0.011)
W-7	T(0.06)

1c. VOC Data Qualified due to Detection of Toluene in Field and Equipment Blanks

Sample	Constituents
W-4	T(0.016)
EF-3	T(0.011)
6-1	T(0.011)
W-1	T(4.6)
W-5	T(0.23)
W-6	T(0.0058)
W-7	T(0.06)

No Other Water Data Qualified

Phenol and phthalates were detected in soil at numerous locations but are not considered to be representative of soil impacts due to SWMU releases. As described in Chapter 6, the pattern of occurrence of these constituents does not appear to correspond to the locations of SWMUs or of SWMU releases. In addition, the pattern of detection of these constituents in ground water do not correlate to that in soil. Phthalates were detected in laboratory blanks.

No matrix interferences were encountered during the ground-water analyses. The ground-water data quantitation is generally reproducible, and the ground water data are concluded to be quantitatively representative of conditions in the saturated zone beneath the site.

Comparability

Comparability expresses the confidence with which one data set can be compared with another. Comparability is judged by compliance with the Workplan protocol. Because the workplan protocol was followed carefully, the data collected during the RFI should be comparable among themselves and with all other data collected using the same collection, analytical and quality assurance procedures.

The data generated during the Phase I RFI appear comparable to previous data generated at the site in that the same geographic pattern of detection of similar constituents are indicated. Two different temporary sampling points were used to collect ground water; both gave similar results. The ground-water data should be quantitatively comparable to all other ground-water data collected using the same collection, analytical and quality assurance procedures.

APPENDIX B-1

QUALIFICATIONS OF PROJECT TEAM MEMBERS

PROJECT: 999-190

STATEMENT OF QUALIFICATIONS

April 1994

Summary of Current TriHydro Clients

Client/Sites	Starting Date	Principal Services
<u>Wyoming Department of Environmental Quality</u>		
- Mountain View	1988	Contaminant source identification
- Laramie (Foster's Sinclair)	1990	Vapor and ground-water quality assessment, design and construction of trench to intercept vapors and hydrocarbon product
- Greybull	1992	Emergency response, design, and installation of residential vapor controls
<u>Texaco Refining and Marketing, Inc.</u>		
- Los Angeles Refinery (California)	1985	Hydrocarbon recovery, soil remediation, environmental assessment, regulatory reporting, ground-water monitoring
- El Dorado Refinery (Kansas)	1987	Hydrocarbon recovery, environmental assessment, air monitoring, vapor control, regulatory reporting
- Lockport Refinery (Illinois)	1985	Environmental assessment, regulatory reporting, NPDES evaluation, RCRA
- Bakersfield Refinery (California)	1992	Soil and ground-water quality remediation, environmental assessment
<u>Golden West Refining Company</u>		
- California Refinery	1985	Hydrocarbon recovery, environmental assessment, regulatory reporting, expert witness testimony, ground-water monitoring
<u>Safety-Kleen Corp.</u>		
- 40 sites (principally Midwest)	1988	RCRA closures, UST environmental assessments, regulatory reporting, soil remediation, ground-water remediation, RFIs
<u>Sinclair Oil Corporation</u>		
- Sinclair Refinery (Wyoming)	1985	Environmental assessment, ground-water monitoring, RCRA and State permitting, RFI, regulatory reporting
- Boise, Burley Terminals (Idaho)	1991	Environmental assessment
<u>Miscellaneous Clients</u>		
- Banner Associates (Wyoming)	1991	Municipal ground-water development
- Church and Dwight (Wyoming)	1991	Landfill permit, spill control plan at trona site
- D&B Services (Wyoming)	1992	Environmental assessment at oil field
- Enron (Colorado)	1991	UST environmental assessment
- First Interstate Bank	1992	Environmental audits

Summary of Current TriHydro Clients (continued)

Client/Sites	Starting Date	Principal Services
- Forsgren Associates (Wyoming)	1990	Municipal ground-water development
- Frontier Refining (Wyoming)	1991	Ground-water monitoring, RFI at petroleum refinery
- Holly Sugar Corporation (Wyoming, California, Montana)	1987	Ground-water assessment and monitoring, landfill permit
- Indian Refining Company (Illinois)	1985	RCRA closures, environmental assessments, waste management plans at petroleum refinery
- Koch Materials (Colorado, Kansas)	1991	Site assessments at asphalt plants
- Marathon Oil (Nebraska)	1992	Ground-water monitoring at oil/gas production site
- Shell Pipe Line Corp. (Wyoming)	1991	Assessment and remediation of crude oil spill
- Texaco Inc. (California)	1990	Expert witness testimony for tank farm
- Wheatland (Wyoming)	1987	Landfill permit and ground-water monitoring
- Wyoming Territorial Prison	1991	Ground-water monitoring

**JOHN J. AHERN
PRINCIPAL**

BACKGROUND

Mr. Ahern co-founded TriHydro Corporation in 1984. As a principal of the firm, his primary responsibilities include overall management of TriHydro Corporation, technical review, and regulatory compliance.

Mr. Ahern has over 19 years of experience in the environmental field. His areas of expertise include hydrocarbon spill assessment, recovery and remediation, hazardous waste management, water quality monitoring, ground-water development and supply, property transfer, environmental audits and expert testimony.

EDUCATION

University of Wisconsin:	M.S., Water Chemistry, 1976. "Impact and Management of Urban Stormwater Runoff."
University of Wisconsin:	M.S., Water Resources Management, 1975. Emphasis in Hydrogeology.
Amherst College:	B.A., Chemistry, 1971.

PROFESSIONAL EXPERIENCE

12/84 - Present	TRIHYDRO CORPORATION Water Quality Scientist Laramie, Wyoming
11/81 - 12/84	WESTERN WATER CONSULTANTS, INC. Water Quality Scientist Laramie, Wyoming
8/79 - 11/81	WYOMING WATER RESOURCES RESEARCH INSTITUTE Research Scientist Laramie, Wyoming
10/76 - 6/79	CH2M-HILL, INC. Environmental Scientist Denver, Colorado
10/75 - 6/76	WRIGHT-MCLAUGHLIN ENGINEERS Environmental Scientist Denver, Colorado

8/73 - 10/75

UNIVERSITY OF WISCONSIN
Research Assistant
Madison, Wisconsin

6/71 - 11/72

HICKOK AND ASSOCIATES
Water Quality Lab Manager
Wayzata, Minnesota

PROFESSIONAL AFFILIATIONS

National Water Well Association

EXPERIENCE

HYDROCARBON SPILL ASSESSMENT, RECOVERY, AND REMEDIATION

Assessment of spill migration and seepage loss tracer studies.

Recovery and recharge well maintenance during hydrocarbon recovery.

HAZARDOUS WASTE MANAGEMENT

Identification and quantification of hazardous waste.

Negotiations with regulatory agencies.

Design and supervision of water and soil sampling programs.

Preparation of closure plans and Part B permit applications.

WATER QUALITY MONITORING

Statistical methods for analysis of water quality data.

Quality control over laboratory analytical work.

Design and supervision of ground-water and surface-water monitoring programs.

Soil and ground-water quality clean-up at refineries and petroleum storage terminals.

Stormwater management studies for Denver, Anchorage, St. Louis, Madison, and eight cities in Illinois.

Technical and management advisor for a \$4 million environmental impact statement in Milwaukee.

Principal investigator for research on water quantity-salinity conflicts in the Green River Basin, acid precipitation in Wyoming, and fisheries management in the Green River Basin.

GROUND-WATER DEVELOPMENT AND SUPPLY

Reservoir operations studies on the Little Bighorn River and Tongue River systems, Wyoming.

Water demand projections for Cheyenne, Wyoming.

Drill stem tests for quality and quantity estimates of possible municipal water supplies.

Ground-water resources studies in the Green River Basin, Wyoming.

PROPERTY TRANSFER, ENVIRONMENTAL AUDITS

Soils and ground-water evaluations at property conversion sites.

EXPERT TESTIMONY

Expert witness testimony for subsurface contamination.

JACK G. BEDESSEM, P.E.
CIVIL/ENVIRONMENTAL ENGINEER

BACKGROUND

Mr. Bedessem joined TriHydro Corporation in 1988. Prior to joining the firm, he was employed with the Wyoming Department of Environmental Quality Water Quality Division.

Mr. Bedessem's responsibilities at TriHydro Corporation include project management and engineering design of systems to assess and remediate soil and water quality degradation. Mr. Bedessem is also responsible for preparing and coordinating the preparation of hazardous waste facility, underground storage tank, and landfill closure plans, remedial action plans, RCRA facility investigation and correction action plans, and facility permits. In addition, he is responsible for supervising and coordinating the implementation of assessment, closure and remedial action programs.

Fields of competence include soil and ground-water engineering, water and wastewater engineering, site investigations, remedial design and implementation. Mr. Bedessem is familiar with Federal and State regulations concerning solid waste, hazardous waste (RCRA) underground storage tanks, water and wastewater.

EDUCATION

South Dakota State University:	Supplemental course work and research for advanced water, wastewater and environmental engineering, 1980 - 1982.
South Dakota State University:	B.S., Civil Engineering. Emphasis on water resources engineering, 1980.

PROFESSIONAL EXPERIENCE

8/88 - Present	TRIHYDRO CORPORATION Project Manager, Civil/Environmental Engineer Laramie, Wyoming
10/83 - 7/88	WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY/WATER QUALITY DIVISION Water Quality District Engineer/Supervisor Lander, Wyoming
6/82 - 9/83	WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY/WATER QUALITY DIVISION Water Quality Engineering Evaluator Lander, Wyoming

6/80 - 5/82

CITY OF BROOKINGS WASTEWATER TREATMENT
FACILITY
Wastewater Works Operator and Lab Technician
Brookings, South Dakota

6/80 - 5/82

SOUTH DAKOTA STATE UNIVERSITY
Water Quality Research Assistant
Brookings, South Dakota

PROFESSIONAL CERTIFICATIONS

Professional Engineer #5372, Wyoming
Professional Engineer #27184, Colorado
Professional Engineer #11954, Kansas
Professional Engineer #E-7090, Nebraska
Professional Engineer #062-049091, Illinois

PROFESSIONAL AFFILIATIONS

National Water Well Association
American Society of Civil Engineers
National Council of Examiners for Engineering and Surveying

EXPERIENCE

SPILL ASSESSMENT, RECOVERY AND REMEDIATION

Management and engineering design (plans and specifications) of hydrocarbon recovery systems including interceptor wells and trenches, transmission and wastewater treatment systems. Management and engineering design (plans and specifications) of remediation systems including soil venting, vapor mitigation, bioremediation, land treatment, excavation/disposal and stabilization. Management and planning of site investigations for soil and water degradation due to hydrocarbons.

Coordination of site assessments, remedial actions and emergency response actions with regulatory agencies.

Management and implementation of programs for monitoring, operation and maintenance of remedial action systems.

UNDERGROUND STORAGE TANK ASSESSMENT AND REMEDIATION

Preparation of closure plans in accordance with RCRA and State regulations.

Management of removal, assessment and remediation projects for tank systems which contained petroleum products, hazardous waste (spend solvent) and waste oils.

HAZARDOUS WASTE MANAGEMENT

Management and planning of investigation to assess soil, surface water, ground water and air at hazardous waste facilities . Assessment projects have included sampling and analysis of soil gas, soil, water and air. Management, engineering design and report preparation for remediation and closure of hazardous waste site including solvent recycling facilities, oils refineries, underground and above ground storage tanks, and container storage areas. Desings have included soil venting, ground-water extraction/interception and treatment, excavation/disposal, stabilization, decontamination/decommissionaing, vapor mitigation, and bioremediation. Technical evaluation of design, plans and specifications for construction of final hazardous waste landfill cover.

Technical evaluation of design, plans and specifications for wastewater treatment and disposal systems.

Development and evaluation of closure, decontamination and remedial action alternatives.

Management and preparation of project document including plans, report, specifications, operation/maintenance manuals, health/safety plans and bid documents.

SOLID WASTE MANAGEMENT

Implementation and development of plans to manage industrial solid waste streams.

Technical and regulatory evaluation of landfill permit documents and closure plans.

WATER QUALITY MONITORING

Development and implementation of plans to monitor surface water and ground-water quality in accordance with State and Federal regulations.

Development and implementation of plans to assess the horizontal and vertical extent of ground-water quality degradation.

Evaluation and reporting of water quality data for design of monitoring and remedial action programs.

Management of reoutine ground-water monitoring programs at hazardous waste and underground storage tank sites, in accordance with State and Federal regulations.

GROUND-WATER DEVELOPMENT AND SUPPLY

Inspection and evaluation of public ground-water supply treatment and distribution systems.

Technical advisor for water system operators training committee.

Technical advisor for public works standard specifications development council.

Technical evaluation of design, plans and specifications for water treatment and distribution systems for compliance with State and Federal regulations.

PROPERTY TRANSFER ENVIRONMENTAL AUDITS

Management and development of plans to evaluate potential environmental impacts, site conditions and history. Management and implementation of Level 1 through Level 3 site assessment plans.

**THOMAS C. NISSEN, C.P.G.
GEOLOGIST**

BACKGROUND

Mr. Nissen joined TriHydro Corporation in April 1987. Prior to joining TriHydro, Mr. Nissen completed his M.S. Geology degree and was employed by the Geological Survey of Wyoming. At the time of hire, Mr. Nissen was employed by the Wyoming Water Research Center and was enrolled in additional graduate-level courses at the University of Wyoming.

Mr. Nissen is a senior project manager with TriHydro. His responsibilities include development, administration, and general management of subsurface environmental investigations in a wide variety of hydrogeologic environments. Management responsibilities include project coordination, staffing, budget control, subcontracting, interpretation of Federal and State regulations, and negotiations and client liaison with regulatory agencies.

Mr. Nissen's areas of expertise include regulatory compliance, permit and plan preparation, implementation, and reporting, including RCRA Closure, Post-Closure, Part B, RFI, and NPDES for hazardous and solid waste management and underground storage tank (UST) facilities. Mr. Nissen has designed and supervised implementation of numerous ground-water quality monitoring and remediation programs with emphasis on economic, and Federal, State, and local regulatory issues.

EDUCATION

University of Wyoming:	Supplemental coursework in Geohydrology, 1986-1987.
University of Wyoming:	M.S., Geology, 1985. Specialized in Geomorphology. Thesis titled, "Field and Laboratory Studies of Selected Periglacial Wedge Polygons in Southern Wyoming."
University of Wyoming:	B.S., Geology, 1981. Emphasis on physical and sedimentary geology.

PROFESSIONAL EXPERIENCE

4/87 - Present	TRIHIDRO CORPORATION Geologist Laramie, Wyoming
1/87 - 4/87	WYOMING WATER RESEARCH CENTER Hydrologic Research Aide Laramie, Wyoming

6/86 - 10/86	GEOLOGICAL SURVEY OF WYOMING Geological Researcher I/Landslide Specialist Laramie, Wyoming
6/85 - 9/85	WYOMING STATE HIGHWAY DEPARTMENT Highway Engineering Geologist Cheyenne, Wyoming
1982 - 1984	UNIVERSITY OF WYOMING Teaching Assistant Laramie, Wyoming
1982 - 1983	WESTERN RESEARCH INSTITUTE Graduate Research Appointee Laramie, Wyoming
6/81 - 8/81	GULF MINERAL RESOURCE COMPANY Assistant Field Geologist Casper, Wyoming

PROFESSIONAL CERTIFICATIONS

Wyoming Board of Professional Geologists (PG-595)

American Institute of Professional Geologists (C.P.G. #8669)

OSHA Health and Safety Training for Hazardous Waste Operations and
Emergency Response (maintained since 1988)

OSHA Hazardous Waste Operations Manager (maintained since 1988)

PROFESSIONAL AFFILIATIONS

National Water Well Association
National Ground Water Association
Society of Sigma Xi
American Quaternary Association

EXPERIENCE

SPILL ASSESSMENT, RECOVERY, AND REMEDIATION

Design and supervision of hydrocarbon recovery, soil, and ground-water assessment and remediation programs at petroleum refineries, UST sites, and above-ground storage tank sites, including planning, budgeting, and subcontracting. Job locations include California, Wyoming, Nebraska, Kansas, Illinois, and Indiana.

Installation of hydrocarbon recovery and ground-water extraction systems, including design and construction of wells, supervision on design and construction of fluid collection and transmission piping, fluid storage and power.

Spill extent of degradation investigations (soils and ground water).

Emergency response assessment of petroleum spills at above-ground storage tank facilities in Kansas.

Permitting of ground-water discharge with municipal and state agencies.

UNDERGROUND STORAGE TANK ASSESSMENT AND REMEDIATION

Design and implementation of Closure and Post-Closure Plans under RCRA and UST regulatory programs in Nebraska, Kansas, Iowa, Illinois, and Wisconsin.

Design and implementation of UST subsurface assessments, sampling and analysis plans, and remediation programs (soils and ground water).

HAZARDOUS WASTE MANAGEMENT

Development and implementation of RCRA Closure Plans, Post-Closure Plans, Part B Permit Applications, and Waste Analysis Plans for Hazardous Waste Management Units at petroleum refineries and UST facilities in California, Nebraska, Kansas, Iowa, Wisconsin, and Illinois.

Extent of degradation investigations.

Permitting for disposal of hazardous wastes.

Data collection and interpretation; report preparation.

Identification and quantification of hazardous wastes.

SOLID WASTE MANAGEMENT

Development and implementation of assessment and remediation plans for solid waste management units (SWMUs) and wastewater treatment units at petroleum refineries, UST facilities, industrial landfills, and sugar factories in California, Wyoming, Kansas, Iowa, Illinois, and Indiana.

Extent of degradation investigations.

Permitting for disposal of non-hazardous wastes.

Data collection and interpretation; report preparation.

WATER QUALITY MONITORING

Design and construction of ground-water monitoring wells at petroleum refineries, UST sites, and industrial landfills with emphasis on regulatory issues.

Collection and interpretation of ground-water quality data from petroleum refineries, UST sites, and other hazardous waste management facilities, industrial landfills, and petroleum spill sites.

GROUND-WATER DEVELOPMENT AND SUPPLY

Evaluation of municipal ground-water supply alternatives throughout Wyoming under contract to the Wyoming Water Development Commission, including local/regional ground-water use, water rights impacts, and permitting issues, and hydrogeologic evaluation through literature search and photogeologic and field geologic mapping.

Exploration and drilling for large-production ground-water resources for municipal water supplies in Wyoming.

PROPERTY TRANSFER ENVIRONMENTAL AUDITS

Soil and ground-water quality assessments for land parcels considered for sale or lease at a shutdown oil refinery in Illinois.

Soil and ground-water quality assessments for a property in an industrialized property considered for purchase in California.

MINING

Hydrogeologic evaluation and characterization for restoration of abandoned open-pit uranium mine lands in Wyoming under abandoned mine lands (AML) programs.

OTHER

Geology

Photogeologic and diverse field geologic mapping.

Unconsolidated sediment sampling and laboratory analyses, including particle-size analysis, mineralogical analysis, and SEM analysis.

Collection and analysis of single-channel seismic refraction data for highway construction rippability assessments.

Wellsite supervision and borehole lithologic logging.

Geochemical sampling and reconnaissance for hard-rock uranium and other commodities in the Selkirk Mountains, Idaho, and Washington.

Vadose Zone Investigations

Collection and interpretation of vadose zone monitoring data to define the nature and extent of contaminations in unsaturated soils at petroleum refineries, UST sites, and other hazardous waste management facilities, industrial landfills, and petroleum spill sites.

Geomorphology and Soil Science

Interpretation of surficial geologic processes

Paleogeographic and paleoclimatic reconstruction

Soil description, sample collection, and lab analysis

CHARLES P. DeWOLF
GEOCHEMIST

BACKGROUND

Dr. DeWolf has been a geochemist at TriHydro Corporation since September, 1993. He completed a Ph.D. in Geology in June 1993, and has nine year's experience in general, analytical, and inorganic chemistry. He also has experience in descriptive field geology, geologic mapping, and computer modelling.

At TriHydro, Dr. DeWolf has been involved in underground storage tank assessment, hydrocarbon spill assessment, and water quality monitoring. He has been responsible for preparing sampling and analysis plans, quality assurance performance plans, and monitoring reports for regulatory compliance.

EDUCATION

University of Michigan:	Ph.D., Geology, 1993. "Investigations of Monazite and Garnet Chronology and Applications to the Archean Gneiss Terrane of the Wind River Range, Wyoming."
University of Michigan:	M.S., Geology, 1990
Williams College:	B.A., Chemistry, Environmental Studies, 1982

PROFESSIONAL EXPERIENCE

1987-1993	UNIVERSITY OF MICHIGAN Graduate Research Assistant Ann Arbor, Michigan
1987-1993	UNIVERSITY OF MICHIGAN Graduate Teaching Assistant Ann Arbor, Michigan
1983-1986	FOUNTAIN VALLEY SCHOOL High School Science Teacher Colorado Springs, Colorado

PROFESSIONAL AFFILIATIONS

American Geophysical Union
Geochemical Society

EXPERIENCE

UST ASSESSMENT

Performed soil boring and sampling program for assessment of UST spills, compiled analytical data on soil and ground-water impacts, prepared report.

HYDROCARBON SPILL ASSESSMENT

Plan and perform subsurface assessments of hydrocarbon impacted sites including installation of boreholes and ground-water monitoring wells, soil and ground-water sampling, and soil gas survey.

HAZARDOUS WASTE MANAGEMENT

Design water and soil sampling programs; field collection of soil and ground water at contaminated sites; compile data and prepare reports.

WATER QUALITY MONITORING

Design of ground-water monitoring programs; sampling and analysis workplan preparation, data compilation and report preparation; quality control over laboratory analytical work.

CHEMICAL INSTRUMENTATION

Operation and maintenance of mass spectrometers, electron microbeam equipment for high precision isotopic and elemental analyses; data quality control and evaluation of analytical algorithms.

**GEO
ENVIRONMENTAL**

**STATEMENT
OF
QUALIFICATIONS**

**MOBILE
LABORATORY
SERVICES**

1.0 GEO Corporation

1.1 The Corporation

GEO Environmental is a division of the GEO Corporation, a diversified geoscience company specializing in on-site chemical analysis and sampling. Founded in 1986 and staffed by more than 30 professional scientists, GEO Corporation's specialty is mobile laboratory analysis and sample collection. GEO uses the most modern mobile and fixed laboratory instrumentation in addition to manual and hydraulic sampling equipment.

1.2 Small Business Status

GEO Corporation is a Colorado corporation with headquarters at 400 Corporate Circle, Suite F, Golden, Colorado. The company has small business status and is listed with the Small Business Administration. GEO Corporation practices equal employment opportunity as well as equal treatment of clients.

1.3 GEO Environmental

GEO Environmental presently offers mobile laboratory services in the continental United States. GEO has at its disposal a fleet of 5 mobile laboratories and 7 drill rigs. Each mobile laboratory has a cellular phone. The FAX number is (303) 279-5187.

1.4 Regional Offices

The National Sales Manger is Bob Elliott (303-279-4655).

Rocky Mountain Region (Colorado) (303) 279-4655
Contact: Ron Froh

Great Lakes Region (Michigan) (313) 344-2110
Contact: Phil McElhinney

Western Region (Utah) (801) 566-4590
Contact: Rolf Larsen

Southwest Region (Texas) (713) 338-1015
Contact: Jim Duty

Southeast Region: (Georgia) (404) 425-2828
Contact: Larry Look

2.0 Corporate Mission

The mission of GEO Environmental is to provide to its clients technically competent services related to mobile lab services and environmental sampling.

3.0 Corporate Values and Philosophy

We believe that we serve our clients most effectively when we work actively with them in the production of a final product of the highest quality. GEO is committed to excellence in service and in the product we provide clients. This means that clients get a superior product in real time, which allows decisions to be made at the time of sampling. This saves our clients time and money.

We believe that we serve our community, state, and country with pride when we practice both good corporate and individual citizenship. Our staff and employees are encouraged to involve themselves in activities which will improve the quality of life.

We believe that we serve profitable corporate growth when we draw upon the talent and experience within GEO Environmental. We are dedicated to working as a team of professionals.

4.0 Products and Services

GEO Environmental offers a variety of services related to site investigation and remediation. These are available individually or may be grouped to meet the needs of our clients. GEO Environmental provides high quality, legally defensible data in real time. Our ability to customize services for specific projects results in significant savings of time and money for our clients, while producing a superior product.

GEO Market Segments

- * Pipelines
- * Emergency Response
- * Landfills
- * Underground Storage Tanks
- * RCRA Remediation Sites
- * Superfund Sites

Scope of Services

- * Soil Vapor Surveys
- * Soil Vapor Monitor Installation
- * Mobile Laboratories
- * On-Site Sample Collection & Analysis
 - Soil Samples
 - Water Samples
 - Soil Vapor Samples
- * Monitor Well Installation
- * Disposable Aquifer Implants
- * Hydropunch Capability
- * Chemistry Consulting

5.0 Business References

GEO Environmental has drilled and analyzed samples at more than 500 sites since 1990 throughout the United States. References are available from our corporate office for clients who have used both mobile laboratory and drilling services.

6.0 Personnel Qualifications

GEO is committed to a high degree of professionalism. Because of this, all chemists, geologists and technicians have the appropriate degrees and experience to provide the best possible technical services.

7.0 Field Sampling Equipment

GEO Environmental has custom designed its equipment for field sampling and analysis. GEO matches field sampling equipment to the needs of the client, the type of sample taken, and the terrain on the job site. The following is a list of the kind of equipment available.

7.1 Scorpion hydraulic drilling rigs

- * Soil gas, water, and soil probing capability to 30 feet
- * 5 foot mast (small enough to sample in tight places)
- * Built on a 15 horsepower All Terrain Vehicle (ATV)
- * Fast: uses a Stanley hydraulic hammer
- * All contaminated soil remains in the hole

7.2 One-Ton 4x4 Viper Hydraulic Probing Rig

- * Soil gas, water and soil probing capability to 50'
- * 1", 3/4", 1/2" factory slotted PVC monitor wells
- * Continuous or interval coring capability
- * Cuts through concrete 2' deep
- * 4000 psi hydraulics
- * No soil cuttings: all contaminated soil stays in the hole
- soil density tests
- * 10-foot mast can be lowered for passage through low overhangs

7.3 Hand Held Drilling Equipment

- * Useful in confined spaces or when site access is restricted
- * 1½ inch masonry bit with electric drill
- * Drilling depth to 15 feet
- * Soil sampling by split spoon sampler
- * Water sampling with retract-a-tip probe

7.4 Soil Gas Probes

- * Hand held probes: 5/8 inch outside diameter with 5/8 inch stainless-steel retract-a-tip probe
- * Scorpion probes: 1 inch outside diameter with 1 inch stainless-steel retract-a-tip

7.5 Steam Cleaner

- * For decontaminating probe rods and samplers
- * Landa Steam Cleaner and Hotsy 550
- * Hot (up to 200° F.) and cold rinse capability
- * 1500 psi washing pressure
- * 250 gallon water tank
- * Complete with trailer and generator

7.6 Field Sampling Methodology

GEO offers state-of-the-art sampling methodologies for soil vapor, water and soil sample collection. In particular, GEO has a unique method of real-time ground water sampling, thereby avoiding costly monitoring well installation until the contaminant plume is characterized.

The Expendable Aquifer Sampling Implant (EASI) is capable of groundwater sampling to 50', with well materials costing \$20.00. It works well in clay lithologies where purgeable water is hard to find. The EASI is truly expendable and temporary: it can stay in place for days or months and is easily abandoned with minimal site disruption.

GEO also has continuous core soil sampling and hydropunch capability. Please call for more information.

8.0 Field Analytical Equipment

8.1 Mobile Laboratories

GEO uses cubivans or maxivans with raised fiberglass roofs for its mobile laboratories. These laboratories are fully insulated, air conditioned, and heated to maintain uniform temperatures. All of our mobile laboratories have their own generators as a power source.

8.1.1 Gas Chromatographs

Each mobile laboratory has laboratory grade temperature programmable gas chromatographs configured to the exact specifications of the client's project plan and data quality objectives. GEO uses SRI 8610-50 and Hewlett-Packard 5890 Series II gas chromatographs equipped with multiple detectors. PID, FID, ECD, and TCD detectors as well as LC and GC/MS are employed, allowing GEO to analyze for volatile and semi-volatile organic compounds using SW-846 methods. The gas chromatographs are sensitive to parts per billion (ppb) in the field. The SRI 8610 uses Peak Simple III software which enables it to run two chromatographs with two detectors simultaneously, while the HP GC's and GC/MS utilize the Chemstation software, which allows four detectors to be monitored simultaneously. In addition, the SRI 8610 has purge and trap capabilities, while the HP 5890's utilize OI purge and trap devices. Both are used for the analysis of water and soil samples for volatile hydrocarbons and solvents.

GEO also has a GC/MS mobile lab equipped with a Hewlett-Packard 5971 quadrupole mass-selective detector and 5890 Series II GC for volatile and semivolatile analysis. Volatile sample introduction is accomplished using an OI Purge and Trap unit. In general, GC/MS is sensitive to parts per billion similarly to GC, but has the added important feature of providing additional compound-specific information. This means that each compound identification is confirmed by the individual compound chromatographic retention time and corresponding mass spectrum. In this regard, GC/MS is more efficient than GC, and should be considered when it is important to have an additional level of compound identification.

8.1.2 Semivolatile Testing and Analysis

The most recent equipment addition to GEO Environmental's mobile laboratory is a Hewlett-Packard supercritical fluid extractor (SFE). It uses small solvent aliquots and liquid carbon dioxide to extract semivolatile compounds, especially diesel-range hydrocarbons. This will allow extractions to be carried out in real time, with a typical total extractable hydrocarbon extraction being completed in 10 minutes. GEO also has a high-pressure liquid chromatograph (HPLC) with fluorescent detection is available, especially for polynuclear aromatic hydrocarbon analysis. With the HP GC configuration of PID, FID and ECD detectors, the SFC and HPLC open possibilities of being able to carry out the gamut of environmental contaminant analyses in real time. In particular, PCB's and pentachlorophenol can be analyzed. Please call to discuss your unique analysis needs.

8.2 Methodology of Field Sampling and Analysis

8.2.1 Soil Gas Methods

GEO uses EPA soil gas methods consistent with the Field Screening Methods Catalog and Volume II of SW-846. The technique uses a stainless steel soil gas probe driven to at least 4 feet, or to as deep as a foot above the groundwater, depending on site parameters. Once the probe is driven to depth the retract-a-tip is opened and a vapor sample is drawn to the surface. The pressure of the sampling stream is measured to ensure that a vacuum does not exist, and a sample is collected in a glass sampling bulb after purging the system a minimum of three volumes. Surrogates are added to the bulb prior to analysis. The analysis is carried out on a GC with the appropriate detectors for the given compound list.

If desired, soil gas split samples can be submitted to fixed labs for confirmation using some kind of evacuated sampling container such as a Summa canister, or the following sampling method: a 50 ml vapor sample is collected on an adsorbent trap at ambient temperature. This is accomplished by attaching an adsorbent tube onto the sample collection tube, and then drawing the sample through the adsorbent. The sample is then either solvent or thermally desorbed prior to GC, with the detector choice and detection limits predicated by the analytes of interest.

8.2.2 Soil Gas QA/QC Procedures

Surrogates are added to soil vapor samples to evaluated sample integrity and ensure proper GC performance. Matrix spikes can also be evaluated. Sampling blanks are run at least one every 20 samples to evaluate carryover between samples. The GC calibration is checked on a daily basis by comparing a 4-point calibration curve for the analytes of interest to daily continuing calibration verification standards (CCVs). Other additional QA/QC procedures will be carried out at client request.

8.2.3 Soil, Groundwater and Soil Vapor Analysis Methodology

GEO uses SW-846 methods, including 8020/8015 and method 5030 (purge and trap). BTEX and MTBE are determined using the PID detector and TVH is determined using the FID detector. If required, TEH can be done in the field or at our Golden, Colorado facility. TEH extraction is done by using the California LUFT method or SW-846 method 3650 (SFE method), depending on state requirements. MTBE is done by ASTM method D-4815. TVH is a primary on-site hydrocarbon detection method: the FID chromatogram can be used to evaluate the need for doing TEH. Chlorinated solvents are easily analyzed in the field using the GC/PID/ECD and EPA method 8010. Either purge and trap sample introduction or soil vapor samples can be analyzed for 8010 and 8020 list compounds. Toxic Compound List evaluations can be run by GC/MS or GC/ECD/PID. Biogenic gasses (nitrogen, oxygen, methane, carbon dioxide) are important for landfills and can be run by GC/TCD. Other volatile compounds, such as alcohols ethers, esters, etc. can be evaluated. Please call with your unique compound list and let us help design your survey.

9.0 Documentation of Activities

All sample analyses are documented and filed permanently at GEO corporate offices. GEO backs up the scientific integrity of all professional services, and documents all practices and procedures.

9.1 Analytical Report

GEO provides a complete written assessment report at the completion of sampling and analysis. An initial field report of the results is provided on-site as the data are generated. The final report may include site maps with sample locations, overall summary of sampling procedures, soil conditions, analytical results, and professional recommendations. Reports can be FAXed directly to the client. GEO provides customized services: let us help you get the documentation you need.

GEO Environmental offers two different types of data reports to its clients. These are called LEVEL I and LEVEL II. The difference between these packages is the amount and kind of quality control samples (QC) analyzed with a batch of samples. This assures that each client receives data suitable for a particular need. These QC levels are recognized as industry standards for field methods and provide a way of creating data of known and consistent quality which meet specific data quality objectives.

9.1.1 Level I Report

This is the basic GEO Environmental report. The data are generated using a daily calibration check, blanks and the usage of surrogates in each sample type. The daily check, carried out before any samples are run, verifies that the instrument is performing according to specifications. The analytes must fall within 30 % of the previous calibration. Blanks are analyzed to ensure that there is no background causing potential false positive determinations. For soil vapor, the blank is drawn from the atmosphere at the site. Surrogates are added to each sample prior to analysis, including soil vapor samples. The purpose of surrogates is to simulate the behavior of the analytes during the analysis, thereby ensuring that the analysis will yield valid results. They also indicate matrix effects, although surrogate determinations are not proof of a matrix effect on a given analyte.

The report consists of a tabular data summary and a cover letter which describes potential anomalies. Surrogate recoveries are not included. Also, chromatograms are included for an additional charge.

9.1.2 Level II Report

This report allows for maximum flexibility in meeting client DQO's for a specific project. GEO Environmental is committed to aiding clients in meeting all project-specific needs. The analysis is the same as a Level I test, with options to enhance quality control and reporting options. The options are as follows:

Quality Control Options

GEO Environmental will provide additional quality control, to be carried out for QC batch lots of 20 (or fewer) samples. These options include:

- Matrix spikes
- Duplicate matrix spikes
- Duplicate sample determinations
- Continuing calibration verifications (CCV'S)
- QC check samples (prepared by a third-party source)
- Laboratory control spikes
- Additional blanks, including method and instrument blanks
- End of the day bracketing CCV's

Each of these options must be specified in advance of the actual analysis. In general, the charge for specific QC will be the same as an additional analysis. Charges for blanks will be determined by the overall bid structure. Please call for details

GEO Environmental is committed to providing data of known and consistent quality, and will endeavor to provide whatever quality control is needed for the intended end usage of the data. Let us help you design your sampling and analysis plan.

Reporting Options

GEO Environmental will provide enhanced reports on a project-specific basis. These options include the following:

- Altered report format to meet specific needs
- QC data summaries
- Copies of all chromatograms
- Computer data disks or other special formats

Each of these options must be arranged in advance. Because of the additional time it takes to produce modified formats, the specific per sample cost will reflect the additional work required.

GEO Environmental stands ready to help you define the scope of work for your project in advance. Let our team of professionals help you get the highest quality field data for a reasonable price.

10.0 Chemistry Consulting

GEO Environmental offers unique services for the environmental consultant. The first is the GEO Project Manager (PM). Each large project is assigned a Project Manager. The PM is the senior chemist on-site and is the single point-of-contact for the client. PM's call the client before the project starts to go over the scope of work. The PM oversees both sampling and analysis, and works with the clients to change the scope of work as the analysis guides the sampling. PM's also are responsible for meeting data quality objectives, and continues to work with the client after the project is completed to make sure the report is accurate and quickly prepared.

GEO also offers chemistry consulting through ChemPartner. This service is of great value to the small company who cannot afford to have a full-time chemist on staff, but who need professional chemistry consulting services. Our team of professional chemists, including a Ph.D. chemist, have many years accumulated experience in all phases of environmental analysis, including preparing quality assurance program plans, methods development, unusual matrix samples and determinations, data validation, and preparing reports of all types, including CLP forms packages. From selecting the best possible methodologies and sampling schemes for remediation projects, both big and small, to carrying out data review and interpretation once the project is done, GEO Environmental ChemPartner assists clients in all phases of the project.

11.0 Training, Health, Safety, and Insurance

11.1 Personnel Training

All GEO field employees receive the 40 hour OSHA safety training specified in 29 CFR 1910.120, and a physical examination consistent with 29 CFR 1910.134 and 29 CFR 1910.120 for working with hazardous waste and respirator usage. In addition each employee is thoroughly acquainted with the GEO Safety Plan and Hazard Communication Program.

11.2 Health and Safety Plan

All GEO employees are provided with appropriate safety gear, including safety glasses, hard hats, steel toe boots, and adequate clothing. OSHA health and safety plan guidelines are followed; a medical monitoring plan is also in place.

11.3 Insurance

GEO has liability insurance coverage and each employee is covered by Workman's Compensation and major medical insurance.

12.0 Professional Staff

12.1 RONALD D. FROH

- President, GEO Corporation
- B.S., Geology, Michigan Technological University

AREAS OF EXPERIENCE SINCE 1981

Technical supervisor for underground storage tank sites, industrial sites, modeling and computer applications, project management, remedial vapor extraction monitoring system designs, air monitoring remedial efficiency designs, safety programs officer, mobile analytical laboratory designer, groundwater sampling design coordinator, and project liaison officer.

MAJOR CLIENTELE

- Industry in the categories of: environmental, oil & gas, minerals
- Major oil & gas companies
- Banks and lending institutions
- Major consulting firms

GEOGRAPHICAL LOCATIONS OF SIGNIFICANT EXPERIENCE

Colorado, Oklahoma, Texas, North Dakota, Montana, Nevada, Illinois, Wyoming, Kansas, Ohio, New Mexico, Louisiana, Arkansas, Wisconsin, Michigan, South Dakota, and Nebraska

BEFORE JOINING GEO ENVIRONMENTAL

- XCO OF COLORADO, INC. - Geologist
- TOOKE ENGINEERING - Geologist
- ONYX PETROLEUM - Senior Geologist
- TEXCO PETROLEUM - Geologist
- EXPLORATION SERVICES, INC. - Regional Manager
- TD ENGINEERING, INC. - Regional Manager/geologist
- WHITE PINE COPPER COMPANY - Staff geologist

12.2 ELIZABETH D. SEXTON

- Director of Chemistry
- Ph.D., Analytical Chemistry, Pennsylvania State University
- M.S., Analytical Chemistry, University of Denver
- B.A., English, Grinnell College

AREAS OF EXPERIENCE

Consultant to geologists, engineers and geochemists on project-specific analysis selection and data interpretation. Quality Assurance Program Plans, sampling schemes. Laboratory certification. Working knowledge of Federal program requirements (CWA, SDWA, RCRA, SARA) Environmental and Trace analysis, emphasizing trace organic methods. Experience in EPA protocol (500, 600, SW846), SDWA, RCRA, CERCLA, LUST/UST testing, Hazardous waste characterization, environmental toxic testing in human and biological specimens, FDA contaminant and pesticides methods, AOAC and AWWA procedures. Background in GC, HPLC, GC/MS, SFC, SFE, thermal methods, purge and trap, ICP, AA, IC, enzymatic and wet chemical methods.

BEFORE JOINING GEO ENVIRONMENTAL IN 1992

- Laboratory Director, Analytica, Incorporated. - Technical oversight for 4M, 60 person environmental testing lab, including customer consultations and quality assurance.
- Operations Manager, Analytica, Incorporated. - Laboratory systems management, including making sure all systems conform to EPA regulations.
- Supervising Chemist, Colorado Department of Health. - Supervised 6 chemists and 3 lab technicians in organic environmental analysis. Duties included consultation, and method development.
- Consultant, Lab Support, Inc. - Environmental analysis by GC. Set up capillary GC methods.
- Instructor, Metropolitan State College. - Taught environmental chemistry course part-time.
- Visiting Assistant Professor, University of Nevada, Las Vegas. - Taught basic and advanced analytical chemistry. Set up and administered graduate program in environmental chemistry. Supervised student research.
- Research Scientist, United States Environmental Protection Agency. - Part-time research position in supercritical fluid chromatography and azo dye chemistry. Developed protocol for microextraction of azo dyes.

PUBLICATIONS

- Determination of Organochlorine Pesticides in Serum, E. D. Sexton, Y. K. Herman, L. A. Smith (in preparation).
- Supercritical Fluid Extraction of Pesticides from Fish, E. D. Sexton, USEPA/EMSL internal report, November 1988.
- Microextraction of Azo Dyes from Wastewater, E. D. Sexton, S. M. Pyle, T. L. Jones and L. D. Betowski, USEPA/EMSL report.
- Instrumental Methods of Analysis of Sulfur Compounds in Synfuel Process Streams, J. Jordan, E. Sexton, J. Stahl, J. Talbott, J. Yakupkovic, DOE/PC/40783-T11, T-12 (1983). -T13, -T14 (1984).
- EPA Methods of Chemical Analysis for Oil Shale Waste, J. Wallace, L. Alden, E. Sexton, Denver Research Institute Contract, #68-032791 (1982).
- Enthalpimetric Study of the Surface Interaction of n-butylamine with Silica Gel. J. K. Grime and E. D. Sexton, Anal. Chem. (1982), 54, 902.
- Fixed-Time Kinetic Enthalpimetry: Improved Sensitivity for Enthalpimetric Enzyme Activity Determinations in Homogeneous and Heterogeneous Systems, J. K. Grime and E. D. Sexton, Anal. Chem.

Acta. (1980), 121, 125.

- Comparison of Methods of Trace Metal Enrichment for XRF Determination, D. E. Leyden, W. Weigscheider, W. B. Bodnar, E. D. Sexton, W. F. Nonidez, Analytical Techniques in Chemistry, J. Albaiges, Editor, Pergammon Press, 1980.

RECENT PRESENTATIONS

- Rocky Mountain Analytical Conference, August, 1991. - Symposium organizer and Chairman
- LUST/UST Methodology Symposium, July 1990. - Organizer and Chairman
- Rocky Mountain Analytical Conference, August 1990. - Determination of Organochlorine Pesticides in Serum. Elizabeth D. Sexton, Yvonne K. Herman, Lann A. Smith. - A Rapid Method for the Determination of Alkylphosphonates in Water and Soil. Ruben Abril-Dominguez, Elizabeth D. Sexton, Andrew W. Law.
- Pittsburgh Conference, February 1988. - Supercritical Fluid Chromatography of Azo Dyes. Elizabeth D. Sexton and Steven M. Pyle.
- ACS Regional Meeting, March 1988. - Determination and Speciation of As(III) and As(V). Daniel C. Fisher and Elizabeth D. Sexton. - Determination of Silylated Amines on Derivatized Silica Gel. Elizabeth D. Sexton, Irene M. Farnham, David Gottlieb, and Maheshkumar H. Patel.

AFFILIATIONS

Environmental and Analytical Division, American Chemical Society Chairman,
Boulder Dam Section, American Chemical Society
Colorado Alliance for Science

TRAINING

Supervisory Certificate Program, Colorado State Personnel Department.
Management and Supervision Training, Certificate Received 1990.
"Interact" conflict resolution Colorado State Personnel Department. 1989.
Supercritical Fluid Chromatography Training Course. Lee Scientific 1988.
QA training course, USEPA Solid Waste Symposium, taught by Dr. John Taylor. 1987
GC Troubleshooting and Maintenance, Hewlett-Packard, 1993

12.3 WILLIAM M. WHITON

- Operations Manager for Chemistry
- B.S. Geology, B.S. Physical Science
Ft. Lewis College, Durango, Colorado
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERIENCE

Gas Chromatography - Detectors: PID, FID, FPD, TCD, ECD, and ELCD,
US EPA Methods: 8020, 8140, 608, 8080, Analysis For: Herbicides,
Pesticides, PCB's, BTEX, Hydrocarbon I-D, Sulfur Gases, MTBE, TVH,
GC/MS - US EPA Methods: 524, 624, 8240, 8270, 525, 625, Analysis For:
Volatile and semi-volatile organics, Extractions For: PCB's, Herbicides,
Pesticides, BNA's

TRAINING

- GC/MS Instrumentation and Interpretation University of Colorado Medical
Center, Denver, Colorado
- Capillary Chromatography Hewlett-Packard Training Center, Denver,
Colorado
- Basic Principles of Gas Chromatography, Colorado School of Mines, Golden,
Colorado

GEOGRAPHICAL LOCATIONS OF SIGNIFICANT EXPERIENCE

Colorado, Oklahoma, Texas, Wyoming, Kansas, Ohio, Utah

BEFORE JOINING GEO ENVIRONMENTAL IN 1990

- Core Laboratories - Chemist/Chromatographer
- Hager Laboratories - Extractions Chemist, GC/MS Operator
- OEA Aerospace - Mass Spectrometer Operator
- Analox - Gas Chromatographer Training Manager, Soil Vapor
Surveys Director/Chromatographer

AFFILIATIONS

- Association of Ground Water Scientists and Engineers
- The Colorado Hazardous Waste Management Society

12.4 Mark Hayes

- Principal Chemist
- B.S. Biology, Minor in Chemistry,
- Metropolitan State College, Denver, 1988
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERIENCE

GC/MS, GC, environmental analysis and extraction procedures, quality control and quality assurance especially as they relate to Contract Laboratory protocol; supervision of technicians and chemists; troubleshooting and setting up laboratory equipment; sat on advisory board for petroleum product analysis for the Department of Environmental Quality for the State of Alaska.

BEFORE JOINING GEO ENVIRONMENTAL

- Analytica-Alaska Incorporated -- Lab Manager
- Analytica Incorporated, Golden, Colorado -- GC/MS Operator
GC Analyst, Organic and Inorganic Preparation Technician
- U.S. Navy -- Special Forces Group/Beach Master Unit

TRAINING

- GC/MS Instrumentation and Interpretation,
ACS Training course, 1991

12.5 ADAM P. MacDONALD

- Senior Geochemist/Project Manager
- B.S. Geology, University of New Hampshire
- Graduate School, University of Colorado (Boulder)
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERIENCE

VAX/VMS computerized oil well analysis, stratigraphic data base compilation, site and laboratory safety coordinator, stratigraphic computer modeling, computerized structural horizon mapping, computerized thickness mapping, and well site consulting, GC operator and interpretation, soil horizon classification

GEOGRAPHICAL LOCATIONS OF SIGNIFICANT EXPERIENCE

Wyoming, Colorado, Kansas, New Hampshire, Arizona, North Dakota, Oklahoma, Texas, Utah, New Mexico

BEFORE JOINING GEO ENVIRONMENTAL

- GEO Corporation - Wellsite Geologist
- Analex (Division of XCO of Colorado) - Logging Analyst, Wellsite Consultant
- RPIU International, Inc. - Oil and Gas Specialist

12.6 JOHN RINKER

- Field Chemist/Project Manager
- B.A. Chemistry, University of Florida, Gainesville
- 40 Hour OSHA Trained (29 CFR 1910.120)
- 40 Hour OSHA Training Update

AREAS OF EXPERTISE

EPA SW-846 sampling protocol, regulatory compliance, chemical segregation and lab packing. Project management, waste minimization. Technical report writing, Haz/Cat waste and L.S.A radioactive waste characterization. Organics analysis by GC, computer applications.

BEFORE JOINING GEO ENVIRONMENTAL

- Environmental Scientist, Environmental Chemical Corporation, Denver, CO
- Technical Sales Representative, Ecology Recovery Company, Denver, CO
- Hazardous Waste Coordinator, Ecoflo, Greensboro, NC
- Laboratory Intern, NIST, Gaithersburg, MD

12.7 CHARLES ISBON

- Field Chemist/Project Manager
- B.S. Geology, B.A. Mathematics, University of Texas, Arlington
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERTISE

Organics analysis by GC, including BTEX, petroleum products, chlorinated solvents. Supercritical fluid extraction, total petroleum hydrocarbons by infrared spectrometry. Well site geology, soil lithology.

BEFORE JOINING GEO ENVIRONMENTAL

- Consultant, GEO Corporation, Denver, CO
- Consulting Geologist, Analex, Denver, CO
- Well Site, Logging Consultant, X-Pert Logging

12.8 NATALIE POPIEL

- Field Chemist/Project Manager
- B.A. Biology, University of Colorado, Denver
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERTISE

EPA SW-846 protocol, technical report writing. Organics analysis by GC, computer applications. Supercritical fluid extraction, total petroleum hydrocarbons by infrared spectrometry. Inorganic analysis of water and soil samples.

BEFORE JOINING GEO ENVIRONMENTAL

- Laboratory Scientist, Accu-Labs Research, Golden, CO
- Academic Tutor, Center for Learning Development, UCD, Denver, CO

12.9 HEATHER ESBENSON

- Field Chemist/Project Manager
- B.A. Biology, Psychology, University of Colorado, Boulder
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERTISE

EPA SW-846 protocol, standards preparation and documentation. Writing SOP's, method detection limit studies. Involved in performance evaluation standards, stock inventory, GC volatile analysis with purge and trap sample introduction, semi-volatile analysis.

BEFORE JOINING GEO ENVIRONMENTAL

- Standards Prep Chemist, Rocky Mountain Analytical, Arvada, CO
- GC Semi-Volatile Analyst, Rocky Mountain Analytical
- GC Volatile Analyst, Rocky Mountain Analytical
- GC Volatile Analyst, Phoenix Analytical Laboratory
- Research Assistant, University of Colorado, Boulder

13.0 NELSON ROWE

- Field Chemist/Project Manager
- B.A.S. Biology, Chemistry Minor, University of Southern Maine
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERTISE

EPA SW-846 protocol, GC analysis of volatile and semi-volatile analytes. Waste segregation and classification, disposal coordination, lab packing, labelling and manifesting. Regulatory compliance. Usage of purge and trap sample introduction, semi-volatile extraction.

BEFORE JOINING GEO ENVIRONMENTAL

- Field Chemist, Environmental Compliance, Denver, CO
- Field Chemist, Laidlaw Environmental Services, Charleston, South Carolina
- Engineering Aid, McClearn/Chemrisk, Portland, Maine
- Laboratory Supervisor, Deering Ice Cream, Portland, Maine
- Phlebotomy Lab Assistant, Mercy Hospital, Portland, Maine
- Environmental Testing Technician, Northeastern Semiconductor, Portland Maine
- Quality Control Lab Technician, Petro Chemicals, Inc., Fort Worth, Texas

CERTIFICATIONS

PHB Technician by National Certification Agency for Lab Technicians
CPR Instructor, American Red Cross
Open Water Navigation
Qualified Submarine Service
Open Water Diving

13.1 JEFFREY SNYDER

- Field Chemist
- B.S. Geology, University of North Dakota
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERTISE

EPA SW-846 protocol, technical report writing. Organics analysis by GC, computer applications. Total petroleum hydrocarbons by gas chromatography.

BEFORE JOINING GEO ENVIRONMENTAL

- Scanning Electron Microscope and X-Ray Diffraction Operator
Natural Materials Laboratory, University of North Dakota
- Teaching Assistant, Geology Department, UND
Denver, CO

13.2 STEVEN MCLEAN

- Field Chemist
- B.S. Geology, University of North Dakota
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERTISE

EPA SW-846 protocol, technical report writing. Organics analysis by GC, computer applications. Petroleum hydrocarbons analysis by gas chromatography, polynuclear aromatic hydrocarbons by liquid chromatography.

BEFORE JOINING GEO ENVIRONMENTAL

- Scanning Electron Microscope and X-Ray Diffraction Operator
Natural Materials Laboratory, University of North Dakota
- Teaching Assistant, Geology Department, UND
- Bridge Crew Member, State of North Dakota
- Farm Laborer, David McLean Farm

13.3 JAY SILER

- Field Chemist
- B.S. Geology, University of Oklahoma
- 40 Hour OSHA Trained (29 CFR 1910.120)

AREAS OF EXPERTISE

EPA SW-846 protocol, technical report writing. Organics analysis by GC. Petroleum hydrocarbons analysis by gas chromatography, total recoverable hydrocarbons by infrared spectroscopy.

BEFORE JOINING GEO ENVIRONMENTAL

- Laboratory Technician, University of Oklahoma, Norman, OK
- Hydrologist, Association for Central Oklahoma Governments
- Roughneck, Lee Jones Construction, Tonkawa, Oklahoma
- Heavy Equipment Operator, Getty Mine, Shirley Basin, Wyoming

13.4 JERALD W. WERTH

- Technical Services Manager
- Denver Institute of Technology
- Radiation Technician
- Nuclear Weapons Training-Group Pacific
- Nuclear Weapons Training-Group Atlantic
- Norfolk Naval Advanced Shipboard Fire Fighting
- 40 Hour OSHA Trained (29 CFR 1910.120)
- First Aid and CPR Trained

AREAS OF EXPERIENCE

Air, water, and soil sampling - Hazardous categorization - Site remediation - Radiation monitoring - Drum handling and sampling - Lab packing - Respirator maintenance - Confined space entry - Site layout and contamination control - operation of field surveying equipment - Disposal of hazardous material - Operate heavy equipment - Worked in conjunction with the U.S. Coast Guard on radiation sites performing remediation, emergency response, and RAD monitoring.

GEOGRAPHICAL LOCATIONS OF SIGNIFICANT EXPERIENCE

Colorado, Wyoming, Utah, New Mexico, Montana, California, Virginia, West Virginia, New Jersey, North Carolina, and Arizona. U.S. Naval Sites: Puerto Rico, St. Thomas, Spain, France, Mexico, and Turkey

BEFORE JOINING GEO ENVIRONMENTAL IN 1991

- Riedel Environmental Services, Pollution Control Specialist
- United States Navy, Nuclear Weapons Technician
- Holiday Inn, Stationary Engineer/Primary Mechanic

13.5 Rolf Larsen

- Environmental Technician--Salt Lake City
- 40 Hour OSHA Trained (29 CFR 1910.120)
- 8 Hour OSHA Supervisor Training
- Red Cross 3 Year First Aid Certificate
- CPR Annual Training
- USAF Electronic Troubleshooting and Repair

Areas of Experience

Drilling and sampling using Stanley sinker and Giddings augur drills. Well installation and Federal, State and Local regulations related to installation and monitoring. Sampling protocols, project Health and Safety Plans. Phase I site investigations. Supervised underground storage tank removals and well abandonment projects. Set-up and maintenance of air strippers and vapor extraction systems.

Before Joining GEO Environmental in 1992

- Harding Lawson Associates
- Gallop Georesources, Inc.
- ITT Corporation, Avionics Division
- Purdy Corporation
- Lapointe Industries

13.6 PHILIP MCELHINNEY

- Regional Manager -- Great Lakes Region
- 40 Hour OSHA Trained (29 CFR 1910.120)
- B.A. History, Pepperdine University

Areas of Experience

Drilling and sampling using Stanley sinker and Giddings augur drills. Well installation and Federal, State and Local regulations related to installation and monitoring. Sampling protocols, project Health and Safety Plans.

Before Joining GEO Environmental in 1993

- Bush-Quayle National Campaign Headquarters 1992
- The Ronald Reagan Foundation
- Aleutian Dragon Fisheries

APPENDIX B-2

FIELD AUDIT RESULTS

Figure VII-12-1. Field Audit Form, RCRA Facility Investigation, Dolton Recycle Center.

FIELD AUDIT

Auditor: Jack Bedessem
TriHydro Corporation

Field Personnel

Site Manager: Tom Nissen / Charlie DeWitt

Date: 9/14/94

Site Health and Safety Officer:

Location: Dolton, IL

Project: Dolton RFI Safety-Kleen Corp.

Field Staff: Doug Gilmer (TriHydro)

Activity: Soil and Ground-Water Sampling

Graig Allen } Geo Environmental
John Rendon }

Health and Safety

PID: Precision Check ($\pm 30\%$) Field Logs Checked - OK

Accuracy Check ($\pm 5\%$) " " " "

Explosimeter: Precision Check ($\pm 30\%$) " " " "

Accuracy Check ($\pm 5\%$) " " " "

Draeger Tubes: None used at time of audit

Personnel Protection Equipment: Hard Hat, Safety Glasses, Boots and L. Shaved Shorts
Ear pluggs.

Incidents: None Reported

Responses: None Reported

Noncompliances with Plan: None Noted

Monitoring Procedures

Soil Sampling / Boring
Sampling Procedure Noncompliance: None observed

Decontamination Procedure Noncompliance: None observed

Field Documentation Noncompliance: None observed

Label Noncompliance: Inspected labels - complete and accurate to date and time

Chain-of-Custody/Sample-Analysis-Request: Inspected COC - complete and accurate to date and time

Noncompliance: None noted

Completeness

SWMU Samples: Approximately 24 samples (2/borehole) collected on site 9/14/94 @ 1:00pm

Background Samples: Background sampling deferred until Phase II

Field Duplicate (1/10): Total duplicates collected by end 9/14/94 will be 3.

Equipment Blank (1/10): No equipment blanks for soils, Equipment blanks will be provided w/gw samples

Trip Blank (1/cooler): No trip blanks for soils, Trip blanks will be provided w/gw samples

Noncompliances with Plan: None noted.

John M. (Tr. Hydro) 9/14/94
Site Manager, Company, Date

Tom M. (Tr. Hydro) 9/14/94
Auditor, Company, Date

General Notes

1. No soil borings planned through secondary containment areas.
2. Number of samples collected was appropriate at time of audit, including blanks.
3. Samples contained in brass vials for VOCs and SVOCs, sealed w/teflon sheeting and plastic caps; some SVOC samples collected in glass jars due to recovery.
4. Samples contained in glass jars for metals, sealed w/teflon-lined screw lids.
5. All samples were stored on ice in coolers following collection.
6. PID and CB meter instructions on-site for review.
7. Field documentation forms checked to date 9/13/94 (1:00pm): field memo, daily instrument/cal. log, H&S worksheet, soil sampling site condition worksheet, borehole logs.
8. Observed drilling/boring soil borings near south warehouse and former TF area and W-1.

APPENDIX C

PHOTODOCUMENTATION OF FIELD ACTIVITIES
RCRA FACILITY INVESTIGATION
PHASE I RELEASE DETECTION ASSESSMENT
SAFETY-KLEEN RECYCLE CENTER, DOLTON, ILLINOIS

- C-1 PHOTODOCUMENTATION OF FIELD ACTIVITIES SOUTH OF 138TH STREET
- C-2 PHOTODOCUMENTATION OF FIELD ACTIVITIES AT NO. 2 AREA BARKER CHEMICAL, NORTH OF 138TH STREET

APPENDIX C-1

PHOTODOCUMENTATION OF FIELD ACTIVITIES SOUTH OF 138TH ST

APPENDIX C-1

PHOTODOCUMENTATION OF RFI FIELD ACTIVITIES

I. DOLTON RECYCLE CENTER, SOUTH OF 138TH STREET

Photo

1. Cleaning up after installing piezometer at EF-2, in the East Field. One-inch PVC piezometer is visible behind truck. At middle left, a field member is screening a soil sample for total organic vapor using a photoionization detector (PID). View looking northeast.
2. Set up to drill at location 5-2 in driveway to Dolton Recycle Center, west of North Warehouse. View looking north.
3. Drilling at FF-2 in Former Southeast Tank Farm. Truck Station No. 3 is visible at left. Truck Station No. 10 is visible to right of tank car. View looking south.
4. Drilling at location PB-1 at the northeast corner of the Process Building. View looking northwest.
5. Drilling at location PB-2 at the southeast corner of the Process Building. View looking west.
6. Drilling at location 10-1 at Truck Station No. 10. Intermittently elevated ambient TOV measurements were recorded at this location due to tank cleaning operations at left. View looking northwest.
7. Set up to drill at location W-5. South Warehouse is to the left. Open area at south end of South Warehouse is also visible in Photo 7. West Tank Farm is visible in right side of photo.
8. Measuring ambient TOV at W-7 for health and safety monitoring. Field member at right is decontaminating brass liners. View looking southeast. Protective coating on tank containment area visible (brown) in lower right.



1



2



3



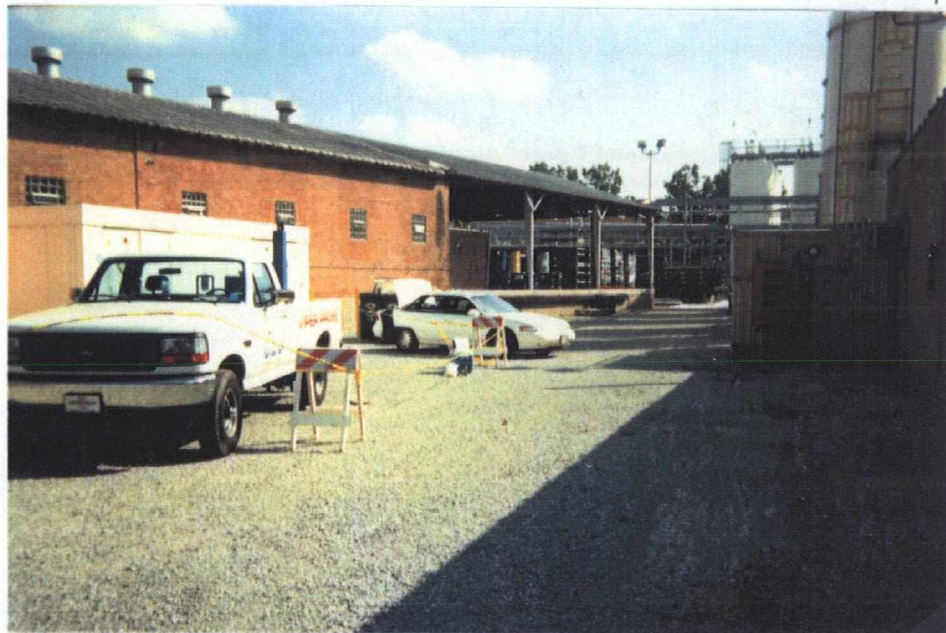
4



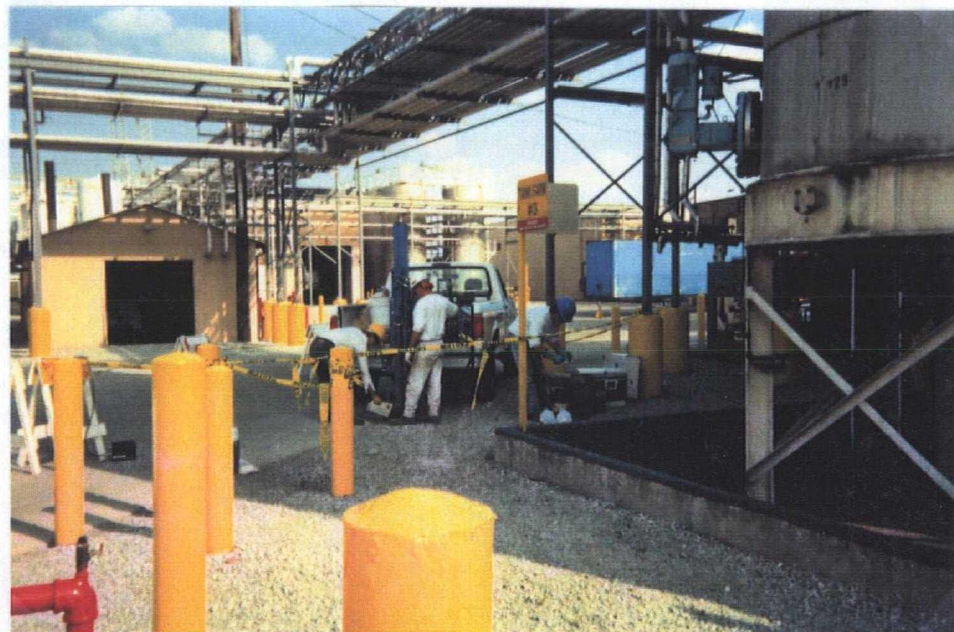
5



6



7



8

APPENDIX C-2

PHOTODOCUMENTATION OF FIELD ACTIVITIES AT NO. 2 AREA BARKER CHEMICAL
NORTH OF 138TH ST

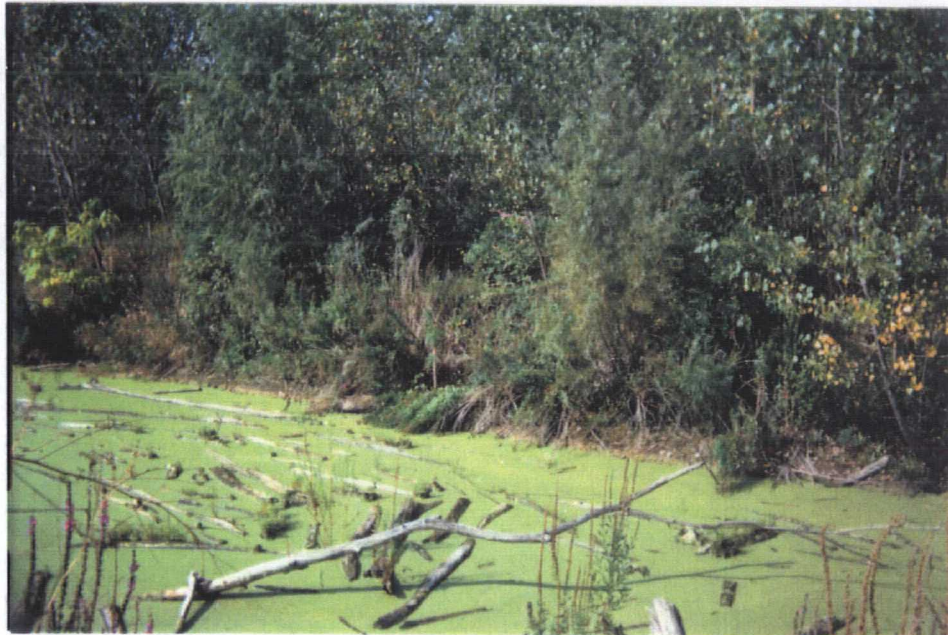
APPENDIX C-2

PHOTODOCUMENTATION OF RFI FIELD ACTIVITIES

II. BARKER CHEMICAL NO. 2 AREA, NORTH OF 138TH STREET

Photo

1. View to southwest across pit. Survey point #4 in center of photo; eastern edge of clearing with goldenrod and young cottonwood trees visible in upper left.
2. View to south-southwest across pit. Survey point #4 visible in right center; survey point #1 at far end of pit hidden by vegetation. Eastern edge of clearing with goldenrod and young cottonwood trees is visible just above and to right of photo center.
3. Survey point #5, north of disturbed area. Point #5 is approximately 15' west of a high voltage powerline tower in very thick vegetation.
4. View almost straight down and slightly southeast. Crushed drum visible in side of steep embankment approximately 8' above water in pit. Area of photo is in "high spoils pile" about 60-70' north of survey point #4.
5. Crushed drum in clearing with goldenrod and young cottonwood trees. Two soil gas borings were placed here and soil sample BC-8 was taken adjacent to drum.
6. View to west across clearing, taken from location of drum in Photo #5. Two soil gas survey borings were placed in this area.
7. Soil gas survey point being advanced in area of scattered drums. View is to the west in area of soil sample BC-2. Crushed drums visible to left of large rock in center of photo, immediately to the left of drill bit, and in vegetation at far right-center of photo. More crushed drums were found in heavy vegetation and in edge of shallow embankment but are not visible in photo.
8. View to southeast of soil sample site BC-5. Site is approximately 8-10' above pit and 10' west of eastern property boundary.
9. Soil sample collection site BC-2. Note crushed drum in center of photo; numerous other crushed drums nearby not visible.
10. Close-up view of drum contents sample BC-D1. Material is black, dry, hard, brittle, and sooty; drum contents also contained abundant rust and scale.
11. Close-up of drum contents sample BC-D2; drum contents consisted of white paint-like material which was moist, spongy, firm to stiff, elastic and slightly sticky. Drum wall was corroded where in contact with drum contents.
12. View south showing drum from which sample BC-D2 was collected and adjacent partially exposed drum. Note the non-native light gray clay on surface. Light gray clay was present at surface throughout the disturbed area. Soils on undisturbed surfaces in the area are brown with large proportion of humic materials.



1



2



3



4



5



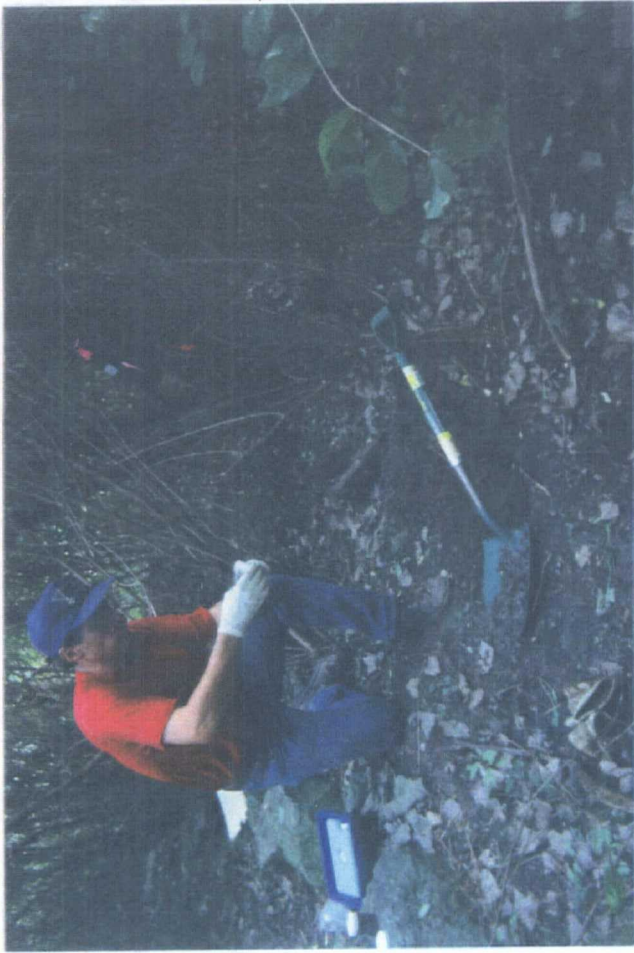
7



6



8



9



11



10



12

APPENDIX D

FIELD NOTES

RCRA FACILITY INVESTIGATION

PHASE I RELEASE DETECTION ASSESSMENT

SAFETY-KLEEN RECYCLE CENTER, DOLTON, ILLINOIS

DAILY FIELD MEMORANDUM

Date:

9/8/94

Field Personnel:

C. DeWolf

D. Gilmer

Forms Completed as Attachments to this Memorandum*:

None

* Note: Ensure all forms are signed by field personnel

Activity Log:

Time	Activity	Location
8:00	Arrive S-K Dalton	Dalton
	- Coord. w/ J. Valerius,	
	- tour wooded site	
9:00	- surveyors arr., begin work	
11:00	- cable locators	
1:00	- tour bore hole locations +	
	witchet mark	
	- coordinate for soil gas	
	on Saturday	
3:30	Check Survey, visit sites	
4:30	travel to AGA gases for	
	nitrogen bottle	
5:00	Leave for motel	

8:00-9:00

Signatures:

[Signature]
[Signature]

Field Personnel

[Signature]
 Project Manager

DAILY FIELD MEMORANDUM

Date: 9/12/94

Field Personnel: Tom Nissen THC Craig Allen GEO
Charlie DeWalt THC John Riordan GEO
Doug Lilmer FC

Forms Completed as Attachments to this Memorandum*:

Calibr. log
bore hole logs
soil sampling log

* Note: Ensure all forms are signed by field personnel

Activity Log:

Time	Activity	Location
7:30	Arrive site, sign in, hand of Amoco samples to courier, wait for GEO, TNissen (GEO arrived 8:00)	S-K Dalton
8:30-9:30	Safety training, orientation	
9:30-10:30	Set up on first hole (EF-3), calibrate, obtain ho ² work permit	
10:30	Start drilling (EF-3, EF-4)	
- 1:30	Break for lunch	
1:30-2:00	LUNCH (GEO lunch 1:30-2:30)	
2:00-	Finish EF-4, move to EF-2, EF-1	
5:30	Sample EF-1 continuously for lithology.	
5:30-	Clean up, store materials & waste drums in shed, coord. work permits, etc.	
6:00 PM		

Signatures:

Doug Lilmer
Charlie DeWalt

Field Personnel

Tom Nissen
 Project Manager

DAILY INSTRUMENT CALIBRATION/MAINTENANCE LOG

Date _____

[illegible][illegible]

No Maintenance Required

Shale P. Wolf

SOIL SAMPLING
SITE CONDITION WORKSHEET

Date: 9/12/94

Job #: 32-02

Sampling Location: EF1, EF2, EF3, EF4

Page: of

Arrival Time: 0930

Sampling Team Members

Affiliation

Charlie DeWolf

TRIHYDRO

Doug Gilmer

TRIHYDRO

Craig Allen

GEO

John Riordan

GEO

Others Present:

Sampling site condition upon arrival (concrete cover, standing water, erosion, etc.):

EF-4 - Dry, grass on surface, nicely landscaped area

EF-3 - Asphalt on surface, dry

EF-2 - Grass, dry

EF-1 - Grass, dry, somewhat settled area

Weather conditions (include significant condition changes and times):

Sunny, Hot, Humid, no significant changes during sampling

Miscellaneous site notes:

Time of Sampling Commencement: 1030

Charlie DeWolf
Observer

**SOIL SAMPLING
HEALTH AND SAFETY WORKSHEET**

Date: 9/12/94

Job #: 32-02

Sampling Location: EF1, EF2, EF3, EF4

Page: of

Onsite Personnel:

Name	Affiliation	PPE (include modifications and times)
Charlie DeWolf	TRIHYDRO	Level D, Long sleeve shirts, hard hats, hearing protection, work boots
Doug Gilmer	TRIHYDRO	
Craig Allen	GEO	
John Riordan	GEO	

Health and Safety Data:

Time of Measurement	Collection Area	TOV (ppm)	% LEL	pH	Air Temperature	Other (Specify)
430	EF-1	0	0	-	85°	-

No additional measurements necessary

Charlie DeWolf
Site Safety Officer

DAILY FIELD MEMORANDUM

Date:

9/13/94

Field Personnel:

D. GILMER THC

C. DEWOLF THC

C. ALLEN GEO

J. R. IRIAN GEO

Forms Completed as Attachments to this Memorandum*:

Borehole logs
Calibration form

* Note: Ensure all forms are signed by field personnel

Activity Log:[illegible]

Signatures:

Field Personnel

Field Personnel


Project Manager


DAILY INSTRUMENT CALIBRATION/MAINTENANCE LOG

Date 9/13/94

Field Instrument and Number	Standard and Concentration	Calibration Reading	Accuracy Reading	Accuracy (+/- from Standard)	Calibrators Initials
DVM 580B	Isobutylene.	100	100.4	+0.4%	DG
Hazco # 2236	100 ppm				
Oxygen/LEL	50% LEL	50%	—	100%	DG
Hazco # 6570	Pentane				

[illegible]

No further action



**SOIL SAMPLING
HEALTH AND SAFETY WORKSHEET**

Date: 9/13/94

Job #: 32-02

Sampling Location: D-2, FF1

Page: of

Onsite Personnel:

Name	Affiliation	PPE (include modifications and times)
Charlie DeWolf	Tri.Hydro	Level D. Had hat, long sleeve shirt, hearing protection, workshoes
Doug Gilmer	Tri.Hydro	"
Craig Allen	GEO	"
John Riordan	GEO	"

Health and Safety Data:

No measurements required

Time of Measurement	Collection Area	TOV (ppm)	% LEL	pH	Air Temperature	Other (Specify)

SOIL SAMPLING
SITE CONDITION WORKSHEET

Date: 9/13/94

Job #: 32-02

Sampling Location: D-2, FF-1

Page: of

Arrival Time: 300

Sampling Team Members

Affiliation

Charlie DeWolf

TRIHYDRO

Doug Gilmer

TRIHYDRO

Craig Allen

GEO

John Riordan

GEO

Others Present:

Sampling site condition upon arrival (concrete cover, standing water, erosion, etc.):

D-2 - gravel on surface, dry

FF-1 - mixed gravel, rock fragments, glass on surface

Weather conditions (include significant condition changes and times):

Hot, Humid, slightly breezy. No change during sampling

Miscellaneous site notes:

Time of Sampling Commencement:

Observer [Signature]

DAILY FIELD MEMORANDUM

Date:

9/14/94

#32-02

Field Personnel:

D. GILMER - THC

C. ALLEN GEO

C. DeWOLF - THC

J. RIORDAN GEO

T. NISSEN - THC

J. BEDESSEN - THC

Forms Completed as Attachments to this Memorandum*:

Calibr. Log

Borehole Logs

FF-1

FF-2

FF-3

10-1

10-2

W-1

W-5

Activity Log:

Time	Activity	Location
8:00	Arrive, check in, set up on FF-1 to re-collect 18-20', calibrate, etc.	S-K Dalton
8:25	Begin drilling	
11:45	Lunch 1 hour GEO 1/2 hour THC	
12:15-12:45	Tour Barker area w/ Jack & Tom	
12:45-1:15	Set up new area, get clean decon. water, etc.	
1:15-	Drilling, start w/ 10-2	
5:15	drilling	
5:15-5:45	Clean up, dispose of wastes, etc.	

Signatures:


 Field Personnel


 Project Manager/Engineer

DAILY INSTRUMENT CALIBRATION/MAINTENANCE LOG

Date 9/14/94

10-15-19

Field Instrument and Number	Standard and Concentration	Calibration Reading	Accuracy Reading	Accuracy (+/- from Standard)	Calibrators Initials
580B DVM HAZCO #	100 ppm Isopropylalcohol	100.0	100.5	+0.5%	DLG
O ₂ / LEL HAZCO #	LEL 50% Pentane	48%	—	100%	DLG

[illegible]

No Maintenance
Required

SOIL SAMPLING
SITE CONDITION WORKSHEET

Date: 9/14/94

Job #: 32-02

Sampling Location: SK DOLTON

Page: _____ of _____

Arrival Time: 0800

Sampling Team Members

Affiliation

<u>Craig Allen</u>	<u>GEO</u>
<u>John Riordan</u>	<u>GEO</u>
<u>Charlie DeWolf</u>	<u>THC</u>
<u>Doug Gilmer</u>	<u>THC</u>

Others Present:

<u>Tom Nissen</u>	<u>THC</u>
<u>Jack Bedessem</u>	<u>THC</u>

Sampling site condition upon arrival (concrete cover, standing water, erosion, etc.):

FF-1, FF-2, FF-3 - spotty grass, dirt w/ fill material
10-1, 10-2, W-1, W-5 - gravel.

Weather conditions (include significant condition changes and times): Dry, Humid, hot.
No Changes

Miscellaneous site notes: _____

Time of Sampling Commencement: 0825

John P. DeWolf
Observer

Date: 9/14/94
Job #: 32-02
Location: SK DOLTON
Page: _____ of _____

Name	Affiliation	PPE (include modifications and times)
Craig Allen	GEO	LEVEL D. Long Sleeve Shirts, Hard hats, Safety Glasses, Sturdy Boots
John Riordan	GEO	
Charlie DeWolf	THC	
Tom Nissen	THC	
Jack Bedessem	THC	

[illegible]

Site Safety Officer

DAILY FIELD MEMORANDUM

Date: 9/15/94

Field Personnel: D GILMER TRIHYDRO C ALLEN GED
C DEWOLF TRIHYDRO J RIDDAN GED
T. NISSEN TRIHYDRO

Forms Completed as Attachments to this Memorandum*:

Calibration sheet
Borehole logs

* Note: Ensure all forms are signed by field personnel

Activity Log:

Time	Activity	Location
7:45	Arrive, sign in, calibrate, set up paperwork	S-K Dalton
8:45	Begin drilling on hole G-1	
9:25	9:25 C. Allen off to make phone call → Set up on S-1	
* 9:50-10:50	RIG BROKEN DOWN 1 HOUR - CD phone calls, DG prep. samples for shipping	
10:50-11:30	Drill	
* 11:30-1:30	Rig broke down - S-K fixed it (John Fluck) - Resume	

Signatures:

D. Gilmer
C. Dewolf

Field Personnel

Tom [Signature]
 Project Manager

DAILY INSTRUMENT CALIBRATION/MAINTENANCE LOG

Date 9/15/94

Field Instrument and Number	Standard and Concentration	Calibration Reading	Accuracy Reading	Accuracy (+/- from Standard)	Calibrators Initials
02/LEL Hazco #6570	50%LEL Pentane			100%	DG
580B OVM Hazco #2236	100ppm Iso butylene	99.7	99.8	-0.2%	DG

[illegible]

No Maintenance
Required

SOIL SAMPLING
SITE CONDITION WORKSHEET

Date: 9/15/94

Job #: 32-02

Sampling Location: SK DOLTON

Page: _____ of _____

Arrival Time: 745

Sampling Team Members

Affiliation

<u>Charlie DeWolf</u>	<u>THC</u>
<u>Doug Gilmer</u>	<u>THC</u>
<u>John Riordan</u>	<u>GEO</u>
<u>Craig Allen</u>	<u>GEO</u>
_____	_____
_____	_____

Others Present:

<u>Tom Nissen</u>	<u>THC</u>
_____	_____
_____	_____

Sampling site condition upon arrival (concrete cover, standing water, erosion, etc.):

G-1, S-2, W-4 - gravel
S-1, W-4, - thick concrete

Weather conditions (include significant condition changes and times): _____

Dry, Hot, Humid. No Change

Miscellaneous site notes: _____

Time of Sampling Commencement: 0845

Observer [Signature]

**SOIL SAMPLING
HEALTH AND SAFETY WORKSHEET**

Date: 9/15/94

Job #: 32-02

Sampling Location: _____

Page: _____ of _____

Onsite Personnel:

Name	Affiliation	PPE (include modifications and times)
<u>Craig Allen</u>	<u>GED</u>	<u>LEVEL D</u>
<u>John Riddan</u>	<u>GED</u>	
<u>Doug Gilmer</u>	<u>THC</u>	
<u>Charlie DeWolf</u>	<u>THC</u>	
<u>Tam Nissen</u>	<u>THC</u>	

Health and Safety Data: Continuous monitoring w/ PID, LEZ meter. No Elevated Readings recorded.

Time of Measurement	Collection Area	TOV (ppm)	% LEL	pH	Air Temperature	Other (Specify)

[Signature]
Site Safety Officer

DAILY FIELD MEMORANDUM

Date:

9/16/94

Field Personnel:

D GILMER - THC
C DEWOLF - "
T NISSEN - "

C ALLEN GEO
J R IORDAN GEO

Forms Completed as Attachments to this Memorandum*:

Calibration
Borehole Logs

Activity Log:

Time	Activity	Location
7:45	Arrive, sign in, calibrate	S-K Dalton
	GEO arrives, gets set up	
8:20	Obtained hot work permits, started on hole D-1	
9:00	Move to D-3. Craig Allen had to stop & phone his stock broker(!), so ~ 10 minutes lost. I dumped on him, this dogging crap has gone on since we started!	
9:15	John Flock wants to set up 3-4 areas and get hot work permits all at once, so we all worked on that.	
10:00 -	Drilling.	
4:00	Finished, released GEO crew.	

Signatures:

Field Personnel

Doug Gilmer
Craig Allen

Project Manager/Engineer

Tom Thorne

DAILY INSTRUMENT CALIBRATION/MAINTENANCE LOG

Date 9/16/94

Field Instrument and Number	Standard and Concentration	Calibration Reading	Accuracy Reading	Accuracy (+/- from Standard)	Calibrators Initials
590B OVM Hazco # 2236	100 ppm Isobutylene	100.2	102.1	+2.1	DG
O ₂ /LEL Hazco # 1570	50% LEL Pentane	50%	100%	φ	DG

[illegible]

SOIL SAMPLING
SITE CONDITION WORKSHEET

Date: 9/16/94

Job #: 32-02

Sampling Location: SK DOLTON

Page: of

Arrival Time: 0745

Sampling Team Members

Affiliation

Charlie DeWolf

THC

Doug Gilmer

THC

Craig Allen

GEO

John Riordan

GEO

Others Present:

Tom Nissen

THC

Sampling site condition upon arrival (concrete cover, standing water, erosion, etc.):

5-3 } PB-1, PB-2 - Gravel
D-1 }
D-3 } Concrete
W-2 }
W-3 }

Weather conditions (include significant condition changes and times): Dry, Hot Humid

No Change

Miscellaneous site notes: _____

Time of Sampling Commencement: 0820

Observer [Signature]

**SOIL SAMPLING
HEALTH AND SAFETY WORKSHEET**

Date: 9/16/94
 Job #: 32-02
 Sampling Location: _____
 Page: _____ of _____

Onsite Personnel:

Name	Affiliation	PPE (include modifications and times)
Craig Allen	GEO	
John Riordan	GEO	
Doug Grimer	THC	
Charlie DeWolf	THC	

Health and Safety Data: - continuous monitoring w/ PID + LEL meter. No elevated readings recorded

Time of Measurement	Collection Area	TOV (ppm)	% LEL	pH	Air Temperature	Other (Specify)

DAILY FIELD MEMORANDUM

Date: 9/19/94

Field Personnel: Charlie DeWolf - THC
Doug Gilmer - THC

Forms Completed as Attachments to this Memorandum*:

Calibration sheet

* Note: Ensure all forms are signed by field personnel

Activity Log:

Time	Activity	Location
0745-10 ⁰⁰	Set up for Hot Work for Sampling, Set up Contractor Training, coordinate w/ surveyors. Prep samples for shipping to lab. Ship samples @ 1000	
10 ⁰⁰ -14 ⁰⁰	Purge, attempt to sample EF wells	
14 ⁰⁰ -14 ³⁰	LUNCH	
1430-18 ⁰⁰	Purge Sample EF wells	
18 ⁰⁰ -18 ¹⁵	Clean up Leave Site	

Signatures:

[Signature]

Field Personnel

[Signature]
Project Manager

DAILY INSTRUMENT CALIBRATION/MAINTENANCE LOG

Date 9/19/94

Field Instrument and Number	Standard and Concentration	Calibration Reading	Accuracy Reading	Accuracy (+/- from Standard)	Calibrators Initials
O ₂ /LEL	Pentane 50% LEL	50%	—	—	DA

Field Instrument and Number	Maintenance Personnel	Maintenance Performed

No mtce req'd.

[Signature]

DAILY FIELD MEMORANDUM

Date: 9/20/94

Field Personnel: Charlie DeWolf -THC
Doug Gilmer -THC

Forms Completed as Attachments to this Memorandum*:

DAILY INSTRUMENT CALIBRATION

* Note: Ensure all forms are signed by field personnel

Activity Log:[illegible]

Signatures:

Field Personnel

John Martin
Project Manager

DAILY INSTRUMENT CALIBRATION/MAINTENANCE LOG

G
Date 9/20/94

[illegible][illegible]

DAILY FIELD MEMORANDUM

Date: 9/21/94

Field Personnel: Charlie DeWolf -THC _____
Doug Gilmer -THC _____

Forms Completed as Attachments to this Memorandum*:

DAILY INSTRUMENT CALIBRATION

* Note: Ensure all forms are signed by field personnel

Activity Log:

Time	Activity	Location
<u>0730-</u>	<u>Begin Setup for Hot Work Permit,</u>	<u>S-K Dalton</u>
	<u>Prepare Samples for Shipping</u>	
<u>0830-1300</u>	<u>Setup, Sample S-1, S-2, S-3, G-1</u>	
<u>1300-1400</u>	<u>LUNCH</u>	
<u>1400-1800</u>	<u>Sample W-5, W-6, W-7, 10-1, 10-2</u>	
<u>1800-1815</u>	<u>Clean up, Leave Site</u>	

Signatures:

Charlie DeWolf _____
Doug Gilmer _____

Field Personnel

John Meier
 Project Manager

DAILY FIELD MEMORANDUM

Date: 9/22/94

Field Personnel: Charlie DeWolf - THC _____
Doug Gilmer - THC _____

Forms Completed as Attachments to this Memorandum*:

NONE

* Note: Ensure all forms are signed by field personnel

Activity Log:

Time	Activity	Location
<u>0730-1230</u>	<u>- obtain Hot Work Permit, re sample</u>	
	<u>W-1, W-5, 10-1. Wait for recharge</u>	
<u>0830-100</u>	<u>Plug and abandon boreholes, concrete</u>	
	<u>surfaces</u>	
<u>100-130</u>	<u>Clean up, check out w/ J Valerius</u>	
<u>130-200</u>	<u>LUNCH</u>	
<u>200-500</u>	<u>Return Equipment / Ship Equipment /</u>	
	<u>Take Samples to Lab</u>	

Signatures:

[Signature]
[Signature]

Field Personnel

[Signature]
 Project Manager

APPENDIX E

BOREHOLE LOGS
RCRA FACILITY INVESTIGATION
PHASE I RELEASE DETECTION ASSESSMENT
SAFETY-KLEEN RECYCLE CENTER, DOLTON, ILLINOIS

FIELD BORING LOG EXPLANATION

LITHOLOGY ¹



CLAY (CL)



CONCRETE



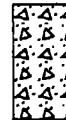
SANDY, SILTY
CLAY (SC/SM)



FILL MATERIAL



SILTY CLAY
(CL/ML)



CONCRETE FRAGMENTS/
SLOUGH



SILTY SAND
(SM)



SAND (SP)



GRAVELLY SANDY CLAY
(CL)



GRAVELLY CLAY
(CL)



GRAVEL (GP)



CLAYEY GRAVELLY SAND
(SW-SC)

¹ USCS CLASSIFICATION DESIGNATION IN PARENTHESES (ASTM-D2488)



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County Cook Boring No. EF-1 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/12/94 Finish 9/12/94

State Plane N. _____ E. _____

Boring Location 11' West of SW corner of Main Office, in grassDrilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer D - Allen/Riordan H - H -	
590.0	1-3' SANDY CLAY & GRAVEL. 1-2' Dark brown to black, mottled gray sandy clay, gray streaks, gravel. 25% LEL in hole, O2 approx. 18%. Sample dry to moist, clay firm. 2-3' Clayey sand, dark red-brown, black color, loose, moist. In offset 1-3', dark brown to blank, mottled gray SANDY CLAY and gravel, dry. Lower 6" of sample is gray-black clay, moist, firm, plastic. 3-4' Gray CLAY, minor sand, moist.		1			63			240		Surface elevation approximate (+/- 1 ft)
589.0			2								
588.0			3			75			302		
587.0			4			75			36		
586.0	4-6' Gray CLAY w/black mottling as above, sediments are completely saturated @ approx. 5' bgs.		5								Water in sample appears to interfere with OVM.
585.0			6								
584.0	6-8' No recovery. Very soft, pushing w/o hammering. Hammer from 9-10' bgs.		7								Offset 1' to west, will drive to 18', sample 18-20' bgs.
583.0			8								
582.0	8-10' Med. gray CLAY, mottled red-brown and light gray, stiff, moist, plastic.		9								
581.0			10								
580.0	Dark gray CLAY, occasional med. sand, occasional gravel to 1/4" (less than 1%), stiff, moist, plastic.		11								
579.0			12								
578.0	12-14' CLAY, as above, very stiff.		13								
577.0			14								
576.0	14-16' No recovery in acetate liner in sampler, OVM reading from wet, empty acetate tube.		15								Open hole tested 388 on OVM.



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County Cook Boring No. EF-2 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/12/94 Finish 9/12/94

State Plane N. _____ E. _____

Boring Location 19' N of NE corner Main OfficeDrilling Equipment GEO ViperProbe


Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer D - Allen/Riordan H - H -	
590.0	1-3' Brown-gray CLAY w/occasional gravel to 1/4", stiff, moist, non-plastic. Grades to medium gray color @ approx. 2.5' bgs.		1			88			0.9		Surface elevations are approximate (+/- 1 ft)
589.0			2								Driving thru soft soils, not even hammering.
588.0			3								Pushed from ~2' bgs to 17' bgs.
587.0			4								
586.0	8-10' Took sample @ 8-10' bgs. Dark gray CLAY mottled black, coarse SAND to fine GRAVEL (approx. 10%, to 1/4", rounded).		5								
585.0			6								
584.0			7								
583.0			8						7.0		Set 5' screen, 3' blank @ ~7.5' bgs, 6" stickup, no obvious water
582.0			9								Offset 1' west will drive to 18', sample 18-20' bgs.
581.0			10								
580.0			11								
579.0			12								
578.0			13								
577.0			14								
576.0			15								

Site File No. 0310690006

County Cook

Boring No. EF-2

Monitor Well No. NA

				SAMPLES						Personnel
Elev.	DESCRIPTION	Graphic Log	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer D - Allen/Riordan H - H -
										REMARKS
575.0	18-20' Gray-brown CLAY, stiff, moist, plastic, no obvious water, contains occasional coarse SAND.		16							
574.0			17							
573.0			18		88			0		Hammered 17' bgs to 18' bgs for sample.
572.0			19							
571.0			20							



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2

Site File No. 0310690006 County Cook

Boring No. EF-3 Monitor Well No. NA

Site File Name Safety-Kleen/Dolton, Illinois

Surface Elev. 591.0 Completion Depth 20.0

Fed. ID. No. ILD980613913

Auger Depth 20.0 Rotary Depth NA

Quadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E

Date: Start 9/12/94 Finish 9/12/94

State Plane N. E.

Boring Location S end of Main Office parking lot

Drilling Equipment GEO ViperProbe


Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer D - Allen/Riordan H - H -	
590.0	0-1' Brown-black GRAVELLY CLAY, firm, damp.		1			100			0		Surface elevation approximate (+/- 1 ft)
589.0	1-2' Tan fine to med. SAND, loose, damp.		2								
588.0	2-6' Gray CLAY w/red-brown stain, soft, moist, plastic texture.		3								
587.0	In offset 4-6' Gray CLAY w/red-brown streaks, stiff, plastic, moist. No gravel, increasing sand w/depth.		4			75			0		Collect 4-6' sample, then drive to 18'.
586.0			5								
585.0	6-7' SANDY (15-20%, med.-coarse) gray CLAY, saturated, sticky.		6						0		
584.0	7-8' Gray CLAY, darker than above, very plastic, wet.		7								
583.0	8-10' CLAYEY med.-coarse SAND, GRAVEL to 1/4", dark gray to black, free water.		8			25			0		Acetate tube shattered by gravel. Offset 1' to east.
582.0			9								
581.0	10-12' Gray-brown SANDY (10% +/-, fine-med.) CLAY, plastic, moist.		10			25			0		
580.0			11								
579.0	12-14' CLAY, as above, sand content down to approx. 1%, stiff, moderately plastic, moist.		12			75			0		
578.0			13								
577.0	14-16' CLAY, as above, very stiff but still plastic, no sand.		14						0		
576.0			15								

Site File No. 0310690006

County Cook

Boring No. EF-3

Monitor Well No. NA

				SAMPLES							Personnel	
Elev.	DESCRIPTION	Graphic Log	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer D - Allen/Riordan H - H -		
										REMARKS		
575.0	16-18' CLAY, as above, very stiff.		16						0	Collect 18-20' sample.		
574.0			17									
573.0	18-20' As above, very stiff, drier.		18			75						
572.0			19									
571.0			20									



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County CookBoring No. EF-4 Monitor Well No. NASite File Name Safety-Kleen/Dolton, IllinoisSurface Elev. 591.0 Completion Depth 20.0Fed. ID. No. ILD980613913Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-INDSec. 3T. 36NR. 14EDate: Start 9/12/94Finish 9/12/94

State Plane N. _____

E. _____

Boring Location East-central parking lot, Main Office bldgDrilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer D - Allen/Riordan H - H -	
590.0	1-3' Dark gray CLAY, black streaks, sticky, wet, soft plastic, material appears to be fill. 1-3' offset: 4" Dark CLAY in 1 ring. Limestone cobble fragments in remainder of sample.		1			17					Surface elevation approximate (+/- 1 ft) EF-4 is in approx. center of 1980 disturbed area; fill material? Limestone chips in sampler. Required 4 attempts for 1-3' sample. Water @ approx. 2' in hole, bubbling, up to 40% LEL (methane?). Caving cobbles prevent PVC from being set.
589.0			2								
588.0			3								
587.0			4								
586.0			5								
585.0			6								
584.0			7								
583.0			8								
582.0			9								
581.0			10								
580.0			11								
579.0			12								
578.0			13								
577.0			14								
576.0			15								


Set EASI perfed from 2'-8' bs.



Illinois Environmental Protection Agency

Field Boring Log

Page 2 of 2Site File No. 0310690006County CookBoring No. EF-4Monitor Well No. NA

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer D - Allen/Riordan H -	
575.0	18-20' Dark gray to black CLAY, soft, plastic, wet.		16								
574.0			17								
573.0			18		13			3.9			
572.0			19								
571.0			20								Covered West offset over lunch, measured > 40% LEL afterward; still bubbling; assume methane.



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2

Site File No. 0310690006 County Cook

Boring No. FF-1 Monitor Well No. NA

Site File Name Safety-Kleen/Dolton, Illinois

Surface Elev. 596.0 Completion Depth 20.0

Fed. ID. No. ILD980613913

Auger Depth 20.0 Rotary Depth NA

Quadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E

Date: Start 9/13/94 Finish 9/13/94

State Plane N. E.

Boring Location S-most hole, old UST basin, S fuel trans station

Drilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer D - Allen/Riordan H - H -	
595.0	1-3' Red-brown SILT, SAND, brick frags, other debris, dry, loose. Grades to dark gray clay, minor sand, very firm, dry to moist. No black streaks.		1								Surface elevations are approximate (+/- 1 ft)
594.0			2								
593.0			3								Set piezometer only. Offset 1' West, begin cont. sampling @ 4'.
592.0	4-6' Dark gray-black SANDY (10-15%, med.-coarse) CLAY, sample moist, firm. Grades to tan sand, coarse to fine gravel, moist.		4	0.2							Screen 4' to 9' bgs.
591.0			5								
590.0	6-8' SAND, as above, more toward medium to fine grained, wet approx. 6', grades to gray CLAY, stiff, plastic, mottled red-brown, moist.		6	0.2							5' screen + 4.5' casing set, TD = 9' bgs + 0.5' stickup.
589.0			7								
588.0	8-10' Gray CLAY as above.		8	0.2							
587.0			9								
586.0	10-12' Gray CLAY, darker than above, some coarse SAND and occasional GRAVEL to 1/2", rounded. Very stiff, plastic, moist.		10	0.2							
585.0			11								
584.0	12-14' As above, GRAVEL to 1".		12	0.2							
583.0			13								
582.0	14-16' As above. Plenty of water of hole.		14								
581.0			15								



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2

Site File No. 0310690006 County Cook Boring No. FF-2 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 594.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/14/94 Finish 9/14/94

State Plane N. _____ E. _____

Boring Location SE of fuel station, bldg #15Drilling Equipment GEO ViperProbe


Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf	D - Allen/Riordan
										H -	H -
										REMARKS	
593.0	1-3' Dark gray to black clay, silt, sand, gravel (FILL material), grades to dark gray clay, firm, damp to dry.		1			50			0.2	Surface elevation approximate (+/- 1 ft) Set 1" piezometer TD = 9.0' bgs. Offset 1' North, drive to 10', collect 1-3' again, as above.	
592.0			2								
591.0			3								
590.0			4							5' screen from 4-9', 1' stickup.	
589.0			5								
588.0			6								
587.0			7								
586.0			8								
585.0			9								
584.0			10								
583.0			11								
582.0			12								
581.0			13								
580.0			14								
579.0			15								



Illinois Environmental Protection Agency

Field Boring Log

Page 2 of 2Site File No. 0310690006County CookBoring No. FF-2Monitor Well No. NA

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES							Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H -		
578.0	18-20' Gray CLAY, dark, moist, stiff but plastic, minor coarse SAND, no gravel.		16									
577.0			17									
576.0			18		88			2.6				
575.0			19									
574.0			20									

Site File No. 0310690006 County Cook Boring No. FF-3 Monitor Well No. NA

Site File Name Safety-Kleen/Dolton, Illinois Surface Elev. 594.0 Completion Depth 20.0

Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NA

Quadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/14/94 Finish 9/14/94

State Plane N. _____ **E.** _____


Boring Location Approx. 200' E of fuel trans. bldg #15

Drilling Equipment **GEO ViperProbe**

[illegible]

Site File No. 0310690006 **County** Cook

Boring No. FF-3 Monitor Well No. NA

				SAMPLES						Personnel	
Elev.	DESCRIPTION	Graphic Log	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H - H -	
										REMARKS	
578.0	18-20' Medium to dark gray SANDY (5%, coarse) CLAY, wet, very stiff, plastic when worked.		16								
577.0			17								
576.0			18								
575.0			19								
574.0			20								



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County Cook Boring No. 10-1 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 592.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start _____ Finish _____

State Plane N. _____ E. _____

Boring Location Truck loading dock area, 15' southDrilling Equipment GEO ViperProbe


Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DaWolf	D - Allen/Riordan
										H -	H -
										REMARKS	
591.0	1-3' Dark brown to black silt, sand, and gravel (FILL material) grading to dark gray to black SANDY (15%, coarse) CLAY, moist, stiff, plastic when worked by hand, greasy feel, black streaks. Lithology in offset 1-3': As above, streaked, heterogeneous.		1			88			683	Surface elevations are approximate (+/- 1 ft)	
590.0			2							Hole is in gravel, so collected 1-3', 18-20'.	
589.0			3							Offset 1' East to set EASI (4-10') rather than piezometer. Collect CD-1(1-3) soil duplicate in offset. Tank cleaning 75' to West; getting ambient air to ~25 ppm.	
588.0			4								
587.0			5								
586.0			6								
585.0			7								
584.0			8								
583.0			9								
582.0			10								
581.0			11								
580.0			12								
579.0			13								
578.0			14								
577.0			15								



Illinois Environmental Protection Agency

Field Boring Log

Page 2 of 2Site File No. 0310690006 County CookBoring No. 10-1 Monitor Well No. NA

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DaWolf D - Allen/Riordan H -	
576.0	18-20' Dark gray SANDY (5%, coarse) CLAY, moist, stiff.		16								
575.0			17								
574.0			18		88			66			
573.0			19								
572.0			20								



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2

Site File No. 0310690006 County Cook Boring No. 10-2 Monitor Well No. NA

Site File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0

Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NA

Quadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/14/94 Finish 9/14/94

State Plane N. E.

Boring Location Northeast of truck dock

Drilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES					Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	
590.0	1-3' As below: 1-2' Sand, silt, clay, gravel, brick, and concrete (FILL), brown-red to black, greasy feel. 2-3' Dark gray clay w/black streaks, moist, plastic.		1			63			7.9	Surface elevations are approximate (+/- 1 ft)
589.0			2							
588.0	4-6' Gray CLAY as above, mottled black, moist, plastic.		3							Set 5' screen from 3'-8', cut off 15".
587.0			4			83			3.8	
586.0	6-8' As above, less black mottling.		5							
585.0			6			83			3.5	
584.0	8-10' As above, no more black mottling, now red-brown mottling.		7							
583.0			8			83			10.9	
582.0	10-12' As above, occasional coarse SAND and GRAVEL to 1/4", rounded.		9							Set 1" PVC piezometer to 8' TD. 9" stickup.
581.0			10			83			4.9	
580.0	12-14' As above.		11							Offset 1' West, punch to 12'.
579.0			12			75			3.2	
578.0	14-16' As above, very firm, moderately plastic.		13							
577.0			14			83			2.3	
576.0			15							




Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County Cook Boring No. D-1 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 593.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/16/94 Finish 9/16/94

State Plane N. _____ E. _____

Boring Location North of #4 bay, Fuels transfer station bldg #15Drilling Equipment GEO ViperProbe


Elev.	DESCRIPTION	Graphic Log	Depth in feet	Sample	Sample	Sample Recovery	Pocket Penet	N Val	OVA reading	REMARKS
592.0	1-2' Tan SANDY GRAVEL, loose, predominantly fine-med. grained SAND (65%), some SILT and CLAY, black stain, moist, loose. 2-3' Gray to red-brown CLAY, red-brown mottling, black stains, firm, moist, semi-plastic. Lithology the same as above in offset boring.		1			75			397	Surface elevation approximate (+/- 1ft)
591.0			2							
590.0			3							
589.0	4									
588.0	5									
587.0	6									
586.0	7									
585.0	8									
584.0	9									
583.0	10									
582.0	11									
581.0	12									
580.0	13									
579.0	14									
578.0	15									



Illinois Environmental Protection Agency

Field Boring Log

Page 2 of 2Site File No. 0310690006County CookBoring No. D-1Monitor Well No. NA

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H -	
577.0	18-20' Dark gray clay, very stiff, plastic, moist, occasional coarse SAND.		16								
576.0			17								
575.0			18			75		2.3	Offset 1' East, collect 1-3' again, as above. Drive to 10', set EASI. Perfs from 3-10 ft-bgs.		
574.0			19								
573.0	20										

Site File No. 0310690006 County Cook Boring No. D-2 Monitor Well No. NA

Site File Name Safety-Kleen/Dolton, Illinois Surface Elev. 593.0 Completion Depth 20.0


Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NA

Quadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/13/94 Finish 9/13/94

State Plane N. _____ E. _____

Boring Location Southeast of Truck Station No. 3, in gravel

Drilling Equipment GEO ViperProbe

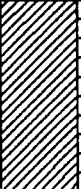
Elev.	DESCRIPTION	Grapp Log	Dep in fe	Sam p	Sam p	Sam Reco	Pock Penet	N Val	OVA readi	REMARKS
										Surface elevation approximate (+/- 1 ft)
592.0	1-3' Tan, fine-medium SAND, loose, moist, occasional gravel to 1/4", no hydrocarbon stain apparent. Recovered 1-1/2 rings. Drove to TD = 10', set 5' screen and 3.5' blank. SWL appears to be approx. 5' bgs. Offset 1' to south, sample 1-3' again and 18-20'. Lithology in 1-3' of offset, as above.		1			38			0.2	
591.0			2							
590.0			3							
589.0		4								
588.0		5								
587.0		6								
586.0		7								
585.0		8								
584.0		9								
583.0		10								
582.0		11								
581.0		12								
580.0		13								
579.0		14								
578.0		15								



Illinois Environmental Protection Agency

Field Boring Log

Page 2 of 2Site File No. 0310690006 County CookBoring No. D-2 Monitor Well No. NA

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer D - Allen/Riordan H - H -	
577.0	18-20' Medium gray CLAY, moist, very stiff but plastic, no streaking.		16								
576.0			17								
575.0			18					0.2			
574.0			19								
573.0			20								

Site File No. **0310690006** County **Cook**

Boring No. D-3 Monitor Well No. NA

Site File Name Safety-Kleen/Dolton, Illinois

Surface Elev. 594.0 Completion Depth 20.0

Fed. ID. No. **ILD980613913**

Auger Depth 20.0 **Rotary Depth** NA

Quadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E

Date: Start 9/16/94 **Finish** 9/16/94

State Plane N. _____ **E.** _____

SAMPLES

Personnel

Boring Location 15' S bldg #14, btwn bays 2&3, adj to RR spur

G - DeWolf/Gilmer
D - Allen/Riordan
H -
H -

Drilling Equipment **GEO ViperProbe**


Elev.	DESCRIPTION	Grav Log	Dep in ft	Sam	Sam	Sam	Rock	Pen	N Va	OVA read	REMARKS
											Surface elevation approximate (+/- 1 ft)
593.0	1-3' All CONCRETE frags. Will try to sample again in offset hole. Concrete very thick, lots of slough, may sample deeper than 1-3' if necessary.		1			75				0	
592.0			2								
591.0			3								
590.0	4-6' Brown-red silt, sand, gravel FILL material, wet loose, grades to medium gray CLAY, firm, plastic, moist, red-brown mottling. Drive to 10', set EASI, perfed 3-10'.		4			83				0.3	
589.0			5								
588.0			6								
587.0			7								
586.0			8								
585.0			9								
584.0			10								
583.0			11								
582.0			12								
581.0			13								
580.0			14								
579.0			15								



Illinois Environmental Protection Agency

Field Boring Log

Page 2 of 2Site File No. 0310690006County CookBoring No. D-3Monitor Well No. NA

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (terf)	N Values (Blows)	OVA or PID readings (ppm)	G - DeWolf/Gilmer D - Allen/Riordan H -	
578.0	18-20' Dark gray CLAY, very stiff, plastic, occasional coarse SAND, moist. Offset 1' North, collect shallow sample again.		16								
577.0			17								
576.0			18		83			0.3			
575.0			19								
574.0			20								



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County CookBoring No. W-1 Monitor Well No. NASite File Name Safety-Kleen/Dolton, IllinoisSurface Elev. 591.0 Completion Depth 20.0Fed. ID. No. ILD980613913Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14EDate: Start 9/14/94 Finish 9/14/94

State Plane N. _____ E. _____

Boring Location NE corner tank farm #3Drilling Equipment GEO ViperProbe


		SAMPLES						Personnel
		Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H - H -
Elev.	DESCRIPTION	Graphic Log	Depth in feet					REMARKS
590.0	1-2' Tan fine to med. SAND, moist, loose.		1	83			128	Surface elevation approximate (+/- 1 ft)
589.0	2-3' Gray CLAY, moist, firm to stiff, plastic, red-brown mottling.		2					
588.0			3					
587.0	4-6' Gray CLAY as above, highly plastic, sticky, wet.		4	92			297	
586.0			5					
585.0	6-8' No recovery.		6					
584.0			7					
583.0	8-10' Gray CLAY, wet, stiff, plastic, contains approx. 10% coarse SAND and occasional GRAVEL to 3/4" dia., rounded.		8	83			2.4	Set 1" PVC piezo: 5' screen, 2.5' blank, 9" stickup. Offset 1' West, drive to 10' bgs.
582.0			9					
581.0	10-12' As above (Borehole No. W-1), less sand, mod. plasticity.		10	75			4.4	
580.0			11					
579.0	12-14' As above.		12	75			12.0	
578.0			13					
577.0	14-16' As above.		14	58			2.0	
576.0			15					

Site File No. 0310690006

County Cook

Boring No. W-1

Monitor Well No. NA

				SAMPLES						Personnel		
Elev.	DESCRIPTION	Graphic Log	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H - H -		
										REMARKS		
575.0	16-18' As above.		16			50			3.2			
574.0			17									
573.0	18-20' As above.		18			83			4.2			
572.0			19									
571.0			20									



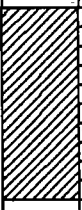
Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County Cook Boring No. W-2 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/15/94 Finish 9/15/94

State Plane N. _____ E. _____

Boring Location North of W-3, west side of tank farm #6Drilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES							Personnel
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS	G - Gilmer/DaWolf D - Allen/Riordan H - H -
590.0	Thick concrete on gravel; collect @ 4-6' instead of 1-3' to avoid crushed rock and concrete slough.		1							Surface elevations are approximate (+/- 1 ft)	
589.0			2								
588.0			3								
587.0	4-6' Medium gray CLAY, mottled red-brown, soft to firm, moist to wet, highly plastic. Lithology in offset 4-6': As above.		4			83			48.3	Collect 4-6' again for dup CD-5 4-6'.	
586.0			5								
585.0			6								
584.0			7							Attempt to set piezometer, not successful. Set EASI to 10', perf. 3-10'.	
583.0			8								
582.0			9								
581.0			10								
580.0			11								
579.0			12								
578.0			13								
577.0			14								
576.0			15								



Illinois Environmental Protection Agency

Field Boring Log

Page 2 of 2Site File No. 0310690006County CookBoring No. W-2Monitor Well No. NA

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H - H -	
575.0	18-20' Dark gray CLAY w/occasional coarse SAND, moist, very stiff, plastic. Recovered approx. 4 rings.		16								
574.0			17								
573.0			18			100		6.9		Offset 1' to South, drill concrete and collect 4-6' again.	
572.0			19								
571.0			20								

Site File No. 0310690006 County Cook Boring No. W-3 Monitor Well No. NA

Site File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0

Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NA

Quadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/16/94 Finish 9/16/94

State Plane N. _____ E. _____

Boring Location **West of tank farm #6**

Drilling Equipment **GEO ViperProbe**

Elev.	DESCRIPTION	Gravel Log	Depth in feet	Sample	Sample	Sample Reco	Pocket Penet	N Value	OVA reading	REMARKS
-590.0	Very thick concrete on top of crushed rock, tried 3-5' interval and got 1-1/2 rings of crushed rock, total approx. 8". Rock is + 3/4", black stained, wet.	[Pattern]	1							Surface elevations are approximate (+/- 1 ft)
-589.0		[Pattern]	2							
-588.0		[Pattern]	3			25			0	
-587.0	4-6' Approx. 4" of GRAVEL as in 3-5' above, black stained w/black water. Underlain by med gray CLAY, soft-firm, red-brown mottling, some black mottling, moist. Water perched in gravel on top of clay.	[Pattern]	4			83			0.9	
-586.0		[Pattern]	5							
-585.0		[Pattern]	6							
-584.0			7							
-583.0			8							
-582.0			9							
-581.0			10							
-580.0			11							
-579.0			12							
-578.0			13							
-577.0			14							
-576.0			15							


Set EASI to 10'.

Site File No. 0310690006

County Cook

Boring No. W-3

Monitor Well No. NA

				SAMPLES						Personnel
Elev.	DESCRIPTION	Graphic Log	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H - H -
										REMARKS
575.0	18-20' Dark gray CLAY w/occasional coarse SAND, very firm, plastic, moist.		16							
574.0			17							
573.0			18			100			0.9	Collect 18-20' plus duplicate CD-4 18-20'. Offset, drive to 4' to collect shallow sample.
572.0			19							
571.0			20							



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County Cook Boring No. W-4 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 592.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/15/94 Finish 9/15/94

State Plane N. _____ E. _____

Boring Location South end of tank farm #3Drilling Equipment GEO ViperProbe

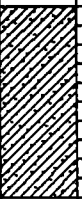
Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf	D - Allen/Riordan
										H -	H -
										REMARKS	
591.0	1-3' SANDY, GRAVELLY, CLAY, dark brown w/black streaks, firm, dry. Grades to medium gray clay w/red-brown mottling, moist, stiff, semi-plastic, some occasional black mottling.		1			83			0.9	Surface elevation approximate (+/- 1 ft)	
590.0			2							Set 1" PVC to TD 6.0', screen 1.0-6.0', 0.75' stickup.	
589.0			3							Offset 1' to South, drive to 18'.	
588.0			4								
587.0			5								
586.0			6								
585.0			7								
584.0			8								
583.0			9								
582.0			10								
581.0			11								
580.0			12								
579.0			13								
578.0			14								
577.0			15								



Illinois Environmental Protection Agency

Field Boring Log

Page 2 of 2Site File No. 0310690006County CookBoring No. W-4Monitor Well No. NA

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES							Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H -		
576.0	18-20' Dark gray SANDY (50%, coarse) CLAY, saturated, sticky, non-plastic. Hit dark gray clay w/o sand at very bottom of hole.		16									
575.0			17									
574.0			18									
573.0			19									
572.0			20									

Site File No. 0310690006 County Cook Boring No. W-5 Monitor Well No. NA

Site File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0




Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NA

Quadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/14/94 Finish 9/14/94

State Plane N. _____ **E.** _____

Boring Location W-5 near truck dock, between two buildings

Drilling Equipment **GEo ViperProbe**

Elev.	DESCRIPTION	Gravel Log	Depth in feet	Sample	Sample	Sample Recovery	Pocket Penet.	N Value	OVA reading	REMARKS	
590.0	1-3' Gravel FILL to 0.5'. 0.5-3' Medium gray CLAY, red-brown mottling, moist, firm, plastic. Collected 2-1/2 rings.		1			63			20	Surface elevations are approximate (+/- 1 ft) Collect 1-3' CD-3. Set EASI to 10', perf. 3-10'.	
589.0				2							
588.0				3							
587.0			4								
586.0			5								
585.0			6								
584.0			7								
583.0			8								
582.0			9								
581.0			10								
580.0			11								
579.0			12								
578.0			13								
577.0			14								
576.0			15								

**Illinois Environmental Protection Agency****Field Boring Log**Page 1 of 2Site File No. 0310690006 County Cook Boring No. W-6 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/15/94 Finish 9/15/94

State Plane N. _____ E. _____

Boring Location W-6Drilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DaWolf	D - Allen/Riordan
										H -	H -
										REMARKS	
590.0	1-3' Dark brown to black, fine-med. SAND, loose, moist, from 1-2' bgs. Medium gray, red-brown, mottled CLAY, minor black mottling, firm semi-plastic, moist from 2-3' bgs.		1			63			0.9	Surface elevation approximate (+/- 1 ft)	
589.0			2							Set piezo, TD 7.8', perf 2.8-7.8' bgs, 0.75' stickup. Offset 1' South, drive to 18'.	
588.0			3								
587.0			4								
586.0			5								
585.0			6								
584.0			7								
583.0			8								
582.0			9								
581.0			10								
580.0			11								
579.0			12								
578.0			13								
577.0			14								
576.0			15								




Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County Cook Boring No. W-7 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/15/94 Finish 9/15/94

State Plane N. _____ E. _____

Boring Location East of tank farm #4, between TF #4 & process bldgDrilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H - H -	
590.0	Thick concrete w/lots of slough again, sample below 1-3' interval.		1								Surface elevation approximate (+/- 1 ft)
589.0			2								
588.0			3								
587.0	3.5-5.5' Medium gray CLAY, red-brown mottling, soft, plastic, moist.		4			83			0.3		Drive to 10', set 1" PVC to TD 8.5', perf 3.5-8.5' bgs. Offset 1' South, drive to 18'.
586.0			5								
585.0			6								
584.0			7								
583.0			8								
582.0			9								
581.0			10								
580.0			11								
579.0			12								
578.0			13								
577.0			14								
576.0			15								



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 1Site File No. 0310690006 County Cook Boring No. PB-1 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 592.0 Completion Depth 2.0Fed. ID. No. ILD980613913 Auger Depth 2.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/16/94 Finish 9/16/94

State Plane N. _____ E. _____

Boring Location NE corner drum processing buildingDrilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G -	H -
										G - Gilmer/DeWolf	D - Allen/Riordan
										H -	H -
										REMARKS	
591.0	0.5-2' Tan SILTY SAND with some gravel, grades to gray CLAY, red-brown mottling, firm, moist. Offset: 0.5-2' sand, silt, and gravel. Wet.		1			68			0.9	Surface elevation approximate (+/- 1 ft)	
590.0			2								




Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 1Site File No. 0310690006 County Cook Boring No. PB-2 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 592.0 Completion Depth 2.0Fed. ID. No. ILD980613913 Auger Depth 2.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/16/94 Finish 9/16/94

State Plane N. _____ E. _____

Boring Location SE corner of drum processingDrilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES							Personnel
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS	G - Gilmer/DeWolf D - Allen/Riordan H -
591.0	0.5-2' Silty sand and gravel FILL material, grades to a tan fine silty sand, moist, loose, no stain. No sign of the clay seen in PB-1 - suspect this is fill material. Offset 0.5-2' Same lithology.		1			63				Surface elevation approximate (+/- 1 ft)	
590.0			2						0.3		



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2Site File No. 0310690006 County CookBoring No. 5-1 Monitor Well No. NASite File Name Safety-Kleen/Dolton, IllinoisSurface Elev. 591.0 Completion Depth 20.0Fed. ID. No. ILD980613913Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14EDate: Start 9/15/94 Finish 9/15/94

State Plane N. _____ E. _____

Boring Location Center Drum Receiving Dock, 15' N of covered areaDrilling Equipment GEO Viper Probe



Elev.	DESCRIPTION	Graphic Log	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
	6" Very strong concrete.									Surface elevations are approximate (+/- 1 ft)
590.0	1-3' Medium gray CLAY w/red-brown mottling, stiff, slightly plastic, moist.		1			75			0.3	
589.0			2							
588.0			3							Offset 1' S, set EASI. Screened interval 3-10 ft bgs.
587.0	4-6' As above, gets wet ~ 5.5' bgs, no more red-brown mottling below water.		4			58			0.3	
586.0			5							
585.0	6-8' As above, wet, plastic, some SAND @ ~7'.		6			75			1.6	
584.0			7							
583.0	8-10' As above. Moist, plastic CLAY. ~5% coarse SAND and occasional rounded GRAVEL to 3/4" diameter.		8			67			2.9	
582.0			9							
581.0	10-12' No recovery.		10			0				
580.0			11							
579.0	12-14' As above. Large piece of GRAVEL partially blocked sampler.		12			29			1.6	
578.0			13							
577.0	14-16' As above, darker color, plastic, sticking in sampler.		14			58			1.6	
576.0			15							

Site File No. 0310690006

County Cook

Boring No. 5-1

Monitor Well No. NA

				SAMPLES						Personnel	
Elev.	DESCRIPTION	Graphic Log	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - DeWolf/Gilmer D - Allen/Riordan H - H -	
										REMARKS	
575.0	16-18' No recovery. Wet sample, would not stick in polybuterate tube.		16			0					
574.0			17								
573.0	18-20' As above, very stiff, plastic.		18			88			1.6		
572.0			19								
571.0			20								





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Field Boring Log

Page 1 of 2Site File No. 0310690006 County Cook Boring No. 5-2 Monitor Well No. NASite File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NAQuadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/15/94 Finish 9/15/94

State Plane N. _____ E. _____

Boring Location South of Drum Receiving Bldg #15Drilling Equipment GEO Viper Probe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - DeWolf/Gilmer D - Allen/Riordan H - H -	
590.0	1-2' Tan medium-coarse SAND, loose, moist. Darkens with depth, grades to...		1			75			0.9		Surface elevations approximate (+/- 1 ft)
589.0	2-3' Medium gray CLAY with red-brown mottling, soft, moist, plastic.		2								Offset 1' S, collect 1-3' again. Set EASI to 10' TD. Perfs 3-10'.
588.0			3								
587.0			4								
586.0	Drive to 18'.		5								
585.0			6								
584.0			7								
583.0			8								
582.0			9								
581.0			10								
580.0			11								
579.0			12								
578.0			13								
577.0			14								
576.0			15								



Illinois Environmental Protection Agency

Field Boring Log

Page 1 of 2

Site File No. 0310690006 County Cook Boring No. 5-3 Monitor Well No. NA

Site File Name Safety-Kleen/Dolton, Illinois Surface Elev. 591.0 Completion Depth 20.0

Fed. ID. No. ILD980613913 Auger Depth 20.0 Rotary Depth NA

Quadrangle Lake Calumet, ILL-IND Sec. 3 T. 36N R. 14E Date: Start 9/16/94 Finish 9/16/94

State Plane N. E.


Boring Location West side drum receiving building

Drilling Equipment GEO ViperProbe

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H - H -	
590.0	Thick concrete again, will attempt to collect @ 1-3' interval.		1			13			0.9		Surface elevation approximate (+/-1 ft)
589.0	Tan SILTY CLAY, mottled gray, moist, loose to firm.		2								
588.0			3								
587.0	4-6' Medium to gray CLAY w/red-brown mottling, soft to firm, moist, highly plastic.		4			100			2.9		Drive to 10', attempt to set piezo. Set 1" PVC to TD = 8.0'. Screen 3.0-8.0' bgs. Offset 1' north, drive to 4'.
586.0			5								
585.0			6								
584.0			7								
583.0			8								
582.0			9								
581.0			10								
580.0			11								
579.0			12								
578.0			13								
577.0			14								
576.0			15								

Site File No. 0310690006 County Cook

Boring No. 5-3 Monitor Well No. NA

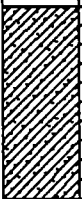
Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H - H -
										REMARKS
575.0	18-20' Dark gray clay, firm to stiff, plastic, moist, occasional coarse sand.		16							
574.0			17							
573.0			18			83		0.9		
572.0			19							
571.0			20							



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Field Boring Log

Page 2 of 2Site File No. 0310690006 County CookBoring No. 6-1 Monitor Well No. NA

Elev.	DESCRIPTION	Graphic Log	Depth in feet	SAMPLES						Personnel	REMARKS
				Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	G - Gilmer/DeWolf D - Allen/Riordan H -	
575.0	18-20' Dark gray SANDY (5%, coarse) CLAY, very stiff, plastic, moist.		16								
574.0			17								
573.0			18		88			0.3			
572.0			19								
571.0			20								

APPENDIX F

SOIL QUALITY LABORATORY DATA REPORTS AND CHAIN-OF-CUSTODY/SAMPLE-ANALYSIS-REQUEST FORMS

- F-1 SOIL ANALYTICAL DATA REPORTS
- F-2 SOIL QA/QC DATA REPORTS
- F-3 CHAIN-OF-CUSTODY/SAMPLE-ANALYSIS REQUEST FORMS
- F-4 SOIL QUALITY DATA SUMMARY TABLES

APPENDIX F-1

SOIL ANALYTICAL DATA REPORTS

CASE NARRATIVE DOLTON REMEDIATION SAMPLES

SK PROJECT 94-063

ORGANIC ANALYSIS

Some soil samples from this site were highly contaminated with organic material. In order for the QC to pass it was necessary to dilute some of the samples resulting in increased PQLs. This resulted in PQLs exceeding the reporting limits for some compounds.

Volatile Organic Samples

On some soil samples a general decrease in response was noted for all compounds. This was due to matrix interference present in the samples. This interference reduced the response of the Mass Spectrometer. The response factor used in quantitating the compounds of interest did not change. The continuing calibration standard and all QC were still within the control limits.

When the surrogate compounds were outside the control limits the sample was reanalyzed to confirm matrix effects. The MS/MSD for the batch still met all Quality Control requirements for these samples. The following samples were originally analyzed using a five (5) gram sample size for volatile analysis and then reanalyzed with a one (1) gram sample size.

<u>SAMPLE</u>	<u>REASON</u>
EF-1 (18-20)	Internal Standards and Surrogates were outside control limits
EF-2 (1-3)	Internal Standards and Surrogates were outside control limits
EF-2 (18-20)	Internal Standards and Surrogates were outside control limits
EF-3 (1-3)	Internal Standards and Surrogates were outside control limits
EF-3 (18-20) MS/MSD	Internal Standards and Surrogates were outside control limits
EF-4 (1-3)	Internal Standards and Surrogates were outside control limits
EF-4 (18-20)	Internal Standards and Surrogates were outside control limits
D-2 (1-3)	Internal Standards and Surrogates were outside control limits
D-2 (18-20)	Internal Standards and Surrogates were outside control limits
FF-1 (1-3)	Internal Standards and Surrogates were outside control limits
FF-1 (18-20)	Internal Standards and Surrogates were outside control limits
FF-2 (1-3)	Internal Standards and Surrogates were outside control limits
FF-2 (18-20)	Internal Standards and Surrogates were outside control limits
FF-3 (1-3)	Internal Standards and Surrogates were outside control limits
FF-3 (18-20)	Internal Standards and Surrogates were outside control limits
BC-3 (1-2) MS/MSD	Internal Standards and Surrogates were outside control limits
BC-4 (1-2)	Internal Standards and Surrogates were outside control limits
BC-5 (1-2)	Internal Standards and Surrogates were outside control limits
BC-6 (1-2)	Internal Standards and Surrogates were outside control limits
BC-7 (1-2)	Internal Standards and Surrogates were outside control limits
BC-8 (1-2)	Internal Standards and Surrogates were outside control limits
BC-9 (1-2)	Internal Standards and Surrogates were outside control limits
BC-10 (1-2)	Internal Standards and Surrogates were outside control limits
BC-12 (1-2)	Internal Standards and Surrogates were outside control limits
BC-D1	Internal Standards and Surrogates were outside control limits
BC-D2	Internal Standards and Surrogates were outside control limits

CASE NARRATIVE DOLTON REMEDIATION SAMPLES SK PROJECT 94-063

Samples run at the same time as the above samples, but from other sources showed no problems with the QC data at five grams. Since the above samples were from the same location and the Internal Standards and Surrogates in the corresponding MS/MSD from Dolton were also outside control limits, it was determined that the problem was due to matrix effects. Subsequently, the sample needed to be analyzed at the one gram level instead of the five gram level. The above samples represent approximately 50% of the soil samples taken at Dolton. This is consistent with the QAPP and SW-846, which allow detection limits to be increased by up to a factor of 125 for soil when matrix effects cause problems.

Some samples had surrogates that were outside the QC limits at a one gram sample size. These samples were reported with the surrogates out because target compounds were detected. Because of the heterogeneity of the sample, smaller sample sizes are not be representative of the soil sample collected. The samples with surrogates outside the control limits are listed below by the surrogate that was found to be outside the control limits.

Toluene-d8 Surrogate

The following samples had a high Toluene Surrogate result. This is a common matrix related phenomenon in samples with high concentrations of non-target hydrocarbons. These samples did not require re-running at a higher dilution due to the fact that toluene was detected in the sample. Also the MS/MSD of the batch showed acceptable recovery of all compounds at both the 5 gram and 1 gram levels.

SAMPLE

FF-1 (18-20)
10-1 (18-20)
10-1 (1-3)
FF-2 (18-20)
CD-1 (1-3)
10-2 (1-3)
10-2 (18-20)
W-5 (1-3)
5-2 (1-3)
W-6 (1-3)

1,2-Dichloroethane Surrogate

The following samples had a high 1,2 Dichloroethane surrogate result. This was shown to be a matrix effect in the sample. Matrix effects were confirmed by analyzing the samples at two concentrations on two different days unless Dichloroethane was actually detected in the sample. In the later case samples were not run at a lower concentration because the MS/MSD for the sample in question exhibited acceptable recovery for all Volatile compounds.

SAMPLE

EF-1 (1-3)	Dichloroethane in sample
EF-3 (1-3)	Re-run at 1 gram sample amount.
FF-2 (1-3)	Dichloroethane in sample
CD-3 (1-3)	Dichloroethane in sample
EF-3 (18-20)	Run at both 5 gram and 1 gram sample amounts
EF-4 (1-3)	Run at both 5 gram and 1 gram sample amounts
FF-2 (18-20)	Run at both 5 gram and 1 gram sample amounts
FF-2 (1-3)	Run at both 5 gram and 1 gram sample amounts
FF-3 (18-20)	Run at both 5 gram and 1 gram sample amounts
BC-D2	Run at both 5 gram and 1 gram sample amounts

CASE NARRATIVE DOLTON REMEDIATION SAMPLES SK PROJECT 94-063

Bromofluorobenzene Surrogate

The following samples exhibited high recovery for Bromofluorobenzene. These samples were run at two different levels (5 grams and 1 gram). They were not re-run because the Bromofluorobenzene recovery was elevated due to sample matrix effects which were confirmed at 5 gram and 1 gram sample amounts.

Attached is a data table containing the results obtained using both 5 gram and 1 gram sample amounts.

SAMPLE

EF-1 (1-3)	Run at both 5 gram and 1 gram sample amounts
BC-3 (1-2)	Run at both 5 gram and 1 gram sample amounts
BC-4 (1-2)	Run at both 5 gram and 1 gram sample amounts
BC-5 (1-2)	Run at both 5 gram and 1 gram sample amounts
BC-6 (1-2)	Run at both 5 gram and 1 gram sample amounts
BC-7 (1-2)	Run at both 5 gram and 1 gram sample amounts
BC-8 (1-2)	Run at both 5 gram and 1 gram sample amounts
BC-9 (1-2)	Run at both 5 gram and 1 gram sample amounts

All samples were analyzed within the 14 day holding times. All samples were initially analyzed at concentration sufficient to meet the requested detection limit. Due to the Quality Control data being outside the control limits the soil samples were re-analyzed using 1 gram of sample as provided for in SW-846. In all cases where both one and 5 gram samples were analyzed there was reasonable agreement between the results. In some cases the PQLs reported for water samples are greater than the desired reporting limits. This is because the sample was diluted so the Surrogates and Internal Standards were recovered within the control limit ranges.

Semi-Volatile Organic Analysis

The extracts of some soil samples were highly contaminated with non-target hydrocarbons. Nine samples had to be diluted in order to successfully apply Method 8270 due to high levels of contamination. This resulted in elevated reporting limits for some of the compounds. The samples affected and their dilutions are listed below. Due to matrix related interference problems, all Barker Chemical samples were analyzed for the Semi-Volatile constituents by two(2) distinct GC/MS methods. The first method employed was 8270A, a full scan GC/MS procedure, which was unable to achieve the desired PQLs because of matrix related interferences. The second method employed is referred to as SIM (Selected Ion Monitoring). The SIM method provides enhanced sensitivity for target analytes and is particularly useful in ruling out the presence of target analytes in complex and interference plagued matrices at PQLs lower than method 8270 can provide. The data table results for the Polyaromatic Hydrocarbons are those obtained using SIM.

SAMPLE

DILUTION

5-2 (18-20)	1:2
BC-6 (1-2)	1:2
BC-8 (1-2)	1:5
BC-9 (1-2)	1:5
BC-10 (1-2)	1:5
BC-11 (1-2)	1:5
WR-2 (1-2)	1:5
BC-D1	1:100
BC-D2	1:50

In a few cases the surrogates were still out after the dilution of the sample. This is due to non-target hydrocarbon interference. These samples are flagged in the Quality control section of the data report.

CASE NARRATIVE DOLTON REMEDIATION SAMPLES SK PROJECT 94-063

The Estimated Quantitation Limit could not be reached for two compounds, 2,6-Dinitrotoluene and 2,4-Dimethylphenol. The Quantitation limit is determined for each compound under the conditions in the laboratory. The laboratory Quantitation limit may vary from the EQL listed in method 8270A. The laboratory derived Quantitation limit is used to report the samples.

Due to lack of sample volume, MS/MSDs were not performed for the water samples that were analyzed for semi-volatile constituents. The Blank MS was prepared along with the samples and those results were compared with historical blank results to ensure the method was operating properly. The surrogates in the sample will show any problems with the sample extraction or matrix effects.

INORGANIC ANALYSIS

Metals Analysis

There is no method blank for samples analyzed for Cadmium on September 23, 1994. The Blank Spike showed no interference and the Extraction Blank shows no contamination. Some samples in the batch had Cadmium, while other samples had no Cadmium. If there is Cadmium contamination all samples would show Cadmium.

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 1 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		02	03	04	05
Collector's Sample #		BC-2	EF-1 (1-3)	EF-1 (18-20)	EF-2 (1-3)
Date Sampled		9/10/94	9/12/94	9/12/94	9/12/94
Date Analyzed		9/24/94	9/28/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg			
Acetone	0.1	<0.1	14	<0.1	<0.1
Benzene	0.005	<0.025	0.24	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	0.166	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	6.12	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.025	0.387	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	0.642	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.025	11.6	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	0.061	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	0.184	<0.025	<0.025
Phenylbenzene	0.005	<0.025	10.5	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 2 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #	02	03	04	05	
Collector's Sample #	BC-2	EF-1 (1-3)	EF-1 (18-20)	EF-2 (1-3)	
Date Sampled	9/10/94	9/12/94	9/12/94	9/12/94	
Date Analyzed	9/24/94	9/28/94	9/28/94	9/28/94	
Analyte	Report Limit mg/Kg	Concentration mg/Kg			
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.025	0.027	<0.025	<0.025
2-Butanone (MEK)	0.1	<0.1	22.9	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	10.4	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	11	<0.025	<0.025
Toluene	0.005	<0.025	12.4	<0.025	0.025
1,1,1-Trichloroethane	0.005	<0.05	10.6	<0.05	<0.05
1,1,2-Trichloroethane	0.005	<0.05	1.64	<0.05	<0.05
Trichloroethylene	0.005	<0.025	8.54	<0.025	<0.025
Trichlorofluoromethane	0.01	<0.05	<0.05	<0.05	0.33
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	0.292	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	<0.025	22.3	0.14	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 3 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		06	07	08	09	10
Collector's Sample #		EF-2 (18-20)	EF-3 (1-3)	EF-3 (18-20)	EF-4 (1-3)	EF-4 (18-20)
Date Sampled		9/12/94	9/12/94	9/12/94	9/12/94	9/12/94
Date Analyzed		9/28/94	9/28/94	9/28/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	0.13	<0.1	0.25	<0.1	4.4
Benzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	0.083	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 4 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #	06	07	08	09	10
Collector's Sample #	EF-2 (18-20)	EF-3 (1-3)	EF-3 (18-20)	EF-4 (1-3)	EF-4 (18-20)
Date Sampled	9/12/94	9/12/94	9/12/94	9/12/94	9/12/94
Date Analyzed	9/28/94	9/28/94	9/28/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg			
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	0.031	<0.025	0.037	<0.025
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	0.54
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	<0.025	<0.025	<0.025
Toluene	0.005	<0.025	0.035	0.048	0.03
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025
Trichlorofluoromethane	0.01	1.4	0.056	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 5 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		11	12	13	14	15
Collector's Sample #		D-2 (1-3)	D-2 (18-20)	FF-1 (1-3)	FF-1 (18-20)	FF-2 (1-3)
Date Sampled		9/13/94	9/13/94	9/13/94	9/14/94	9/14/94
Date Analyzed		9/28/94	9/28/94	9/28/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	0.168	0.18	<0.1	0.39	<0.1
Benzene	0.005	<0.025	<0.025	<0.025	<0.025	0.026
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025	0.049
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025	0.044
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	0.087
cis-1,2-Dichloroethene	0.005	0.034	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	0.03	0.03	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	0.072	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 6 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		11	12	13	14	15
Collector's Sample #		D-2 (1-3)	D-2 (18-20)	FF-1 (1-3)	FF-1 (18-20)	FF-2 (1-3)
Date Sampled		9/13/94	9/13/94	9/13/94	9/14/94	9/14/94
Date Analyzed		9/28/94	9/28/94	9/28/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.025	<0.025	0.056	0.053	0.031
2-Butanone (MEK)	0.1	0.224	<0.1	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	0.303	<0.025	<0.025	<0.025	<0.025
Toluene	0.005	0.421	0.032	0.047	0.042	0.042
1,1,1-Trichloroethane	0.005	0.456	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.050
Trichloroethylene	0.005	0.332	<0.025	<0.025	<0.025	<0.025
Trichlorofluoromethane	0.01	<0.05	<0.05	<0.05	0.4	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	0.083
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	0.804	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 7 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		16	17	18	19	20
Collector's Sample #		FF-2 (18-20)	FF-3 (1-3)	FF-3 (18-20)	10-1 (1-3)	10-1 (18-20)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Analyzed		9/28/94	9/30/94	9/30/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	<0.1	<0.1	0.436	0.77	0.2
Benzene	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Bromodichloromethane	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.01	<0.025	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.01	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.01	<0.025	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.005	<0.025	<0.025	0.18	<0.025
trans-1,2-Dichloroethylene	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	<0.005	<0.025	<0.025	5.1	0.97

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 8 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		16	17	18	19	20
Collector's Sample #		FF-2 (18-20)	FF-3 (1-3)	FF-3 (18-20)	10-1 (1-3)	10-1 (18-20)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Analyzed		9/28/94	9/30/94	9/30/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	0.018	<0.025	<0.025	<0.025	<0.025
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	0.25	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	18.0	1.0
Styrene	0.005	<0.005	<0.025	<0.025	0.24	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Toluene	0.005	0.008	0.031	0.026	151	13
1,1,1-Trichloroethane	0.005	<0.01	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.005	<0.01	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.005	<0.025	<0.025	<0.025	<0.025
Trichlorofluoromethane	0.01	<0.01	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	0.034	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.01	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	<0.005	<0.025	<0.025	26	4.7

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 9 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		21	22	23	24	25
Collector's Sample #		CD-1 (1-3)	10-2 (1-3)	10-2 (18-20)	W-5 (1-3)	W-5 (18-20)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Analyzed		9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	0.37	<0.1	0.12	0.75	0.14
Benzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	0.79	<0.025	0.38	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	0.064	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	0.49	<0.025	0.92	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.025	0.44	<0.025	0.1	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	11	53	0.37	1.5	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 10 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #	21	22	23	24	25
Collector's Sample #	CD-1 (1-3)	10-2 (1-3)	10-2 (18-20)	W-5 (1-3)	W-5 (18-20)
Date Sampled	9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Analyzed	9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg			
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.025	<0.025	<0.025	0.096
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	0.24
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	8.7
Styrene	0.005	0.47	1.2	0.15	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	<0.025	<0.025	1.5
Toluene	0.005	299	14	0.46	82
1,1,1-Trichloroethane	0.005	<0.05	0.25	<0.05	0.49
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.025	<0.025	<0.025	0.028
Trichlorofluoromethane	0.01	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	9.5	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	59	179	1.7	8.8

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 11 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		26	27	28	29	30
Collector's Sample #		W-1 (1-3)	W-1 (18-20)	CD-2 (1-3)	CD-3 (1-3)	6-1 (1-3)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/15/94
Date Analyzed		9/30/94	9/30/94	9/30/94	9/30/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	0.328	<0.1	0.186	6.92	<0.1
Benzene	0.005	<0.025	<0.025	0.033	0.101	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025	0.037
Chloroethane	0.01	<0.025	<0.025	<0.025	2.33	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	<0.025	0.082	2.81	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	0.2	<0.025
Ethylbenzene	0.005	0.115	<0.025	1.03	0.159	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		26	27	28	29	30
Collector's Sample #		W-1 (1-3)	W-1 (18-20)	CD-2 (1-3)	CD-3 (1-3)	6-1 (1-3)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/15/94
Date Analyzed		9/30/94	9/30/94	9/30/94	9/30/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.025	0.068	0.071	0.344	<0.025
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	3.72	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	4.7	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	<0.025	0.043	0.163	<0.025
Toluene	0.005	0.271	<0.025	0.147	9.56	0.11
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.05	0.733	<0.05
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.025	<0.025	0.05	0.157	<0.025
Trichlorofluoromethane	0.01	<0.05	0.34	0.214	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	0.878	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	0.26	<0.025	1.07	0.872	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		31	32	33	34	35
Collector's Sample #		6-1 (18-20)	5-1 (1-3)	5-1 (18-20)	5-2 (1-3)	5-2 (18-20)
Date Sampled		9/15/94	9/15/94	9/15/94	9/15/94	9/15/94
Date Analyzed		9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	0.15	<0.1	<0.1	<0.1	0.12
Benzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	0.094	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	0.29	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	0.04	<0.025	<0.025	<0.025	0.51
cis-1,2-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		31	32	33	34	35
Collector's Sample #		6-1 (18-20)	5-1 (1-3)	5-1 (18-20)	5-2 (1-3)	5-2 (18-20)
Date Sampled		9/15/94	9/15/94	9/15/94	9/15/94	9/15/94
Date Analyzed		9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	0.061	<0.025	<0.025	<0.025	0.12
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Toluene	0.005	<0.025	<0.025	<0.025	0.12	0.6
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Trichlorofluoromethane	0.01	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	0.092	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	<0.025	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		36	37	38	39	40
Collector's Sample #		W-4 (1-3)	W-4 (18-20)	W-6 (1-3)	W-6 (18-20)	D-1 (1-3)
Date Sampled		9/15/94	9/15/94	9/15/94	9/15/94	9/16/94
Date Analyzed		9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	<0.1	0.32	<0.1	0.12	1.9
Benzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	0.043
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	0.68	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	<0.025	<0.025	0.14	<0.025	0.038

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		36	37	38	39	40
Collector's Sample #		W-4 (1-3)	W-4 (18-20)	W-6 (1-3)	W-6 (18-20)	D-1 (1-3)
Date Sampled		9/15/94	9/15/94	9/15/94	9/15/94	9/16/94
Date Analyzed		9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.025	0.26	0.15	0.056	0.048
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	<0.1	0.4
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Toluene	0.005	<0.025	0.028	0.15	<0.025	1.4
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Trichlorofluoromethane	0.01	<0.05	<0.05	0.21	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	<0.025	<0.025	0.065	<0.025	0.96

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 17 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		41	42	43	44	45
Collector's Sample #		D-1 (18-20)	D-3 (4-6)	D-3 (18-20)	W-7 (3.5-5.5)	W-7 (18-20)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Analyzed		9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	0.24	<0.1	<0.1	<0.1	0.17
Benzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		41	42	43	44	45
Collector's Sample #		D-1 (18-20)	D-3 (4-6)	D-3 (18-20)	W-7 (3.5-5.5)	W-7 (18-20)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Analyzed		9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	0.21	0.043	0.058	0.043	0.071
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Toluene	0.005	0.045	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Trichlorofluoromethane	0.01	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	<0.025	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 19 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		46	47	48	49	50
Collector's Sample #		W-3 (4-6)	W-3 (18-20)	W-2 (4-6)	W-2 (18-20)	BC-2A (1-2)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/17/94
Date Analyzed		9/29/94	9/29/94	9/29/94	9/30/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	0.19	0.21	0.15	<0.1	<0.1
Benzene	0.005	<0.025	<0.025	0.036	<0.025	<0.005
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.01
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.01
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.01
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
1,1-Dichloroethane	0.005	<0.025	<0.025	0.13	<0.025	<0.005
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
cis-1,2-Dichloroethene	0.005	<0.025	<0.025	0.95	<0.025	<0.005
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
Ethylbenzene	0.005	<0.025	<0.025	0.036	<0.025	<0.005

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 20 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		46	47	48	49	50
Collector's Sample #		W-3 (4-6)	W-3 (18-20)	W-2 (4-6)	W-2 (18-20)	BC-2A (1-2)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/17/94
Date Analyzed		9/29/94	9/29/94	9/29/94	9/30/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	0.069	0.1	0.042	0.06	<0.005
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	0.14	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.005
Tetrachloroethene (PERC)	0.005	0.035	<0.025	<0.025	<0.025	<0.005
Toluene	0.005	0.036	0.032	0.53	<0.025	<0.005
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.010
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.010
Trichloroethylene	0.005	0.028	<0.025	<0.025	<0.025	<0.005
Trichlorofluoromethane	0.01	<0.05	<0.05	<0.05	<0.05	<0.01
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.010
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	1.6	<0.035	<0.01
Xylenes(Total)	0.005	0.059	<0.025	0.68	<0.025	<0.005

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		51	52	53	54	55
Collector's Sample #		BC-3 (1-2)	BC-4 (1-2)	BC-5 (1-2)	BC-6 (1-2)	BC-7 (1-2)
Date Sampled		9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed		9/28/94	9/28/94	9/28/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	<0.1	<0.1	0.416	0.113	<0.1
Benzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	<0.025	<0.025	<0.025	0.036	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #	51	52	53	54	55
Collector's Sample #	BC-3 (1-2)	BC-4 (1-2)	BC-5 (1-2)	BC-6 (1-2)	BC-7 (1-2)
Date Sampled	9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed	9/28/94	9/28/94	9/28/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg			
2-Hexanone	0.05	0.089	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.025	<0.025	0.033	<0.025
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	0.406	<0.025	0.108
Toluene	0.005	0.048	0.067	0.245	0.046
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025
Trichlorofluoromethane	0.01	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	<0.025	<0.025	<0.025	0.036

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 23 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #	56	57	58	59	60
Collector's Sample #	BC-8 (1-2)	BC-9 (1-2)	BC-10 (1-2)	BC-11 (1-2)	BC-12 (1-2)
Date Sampled	9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed	9/28/94	9/28/94	9/28/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg			
Acetone	0.1	<0.1	<0.1	<0.1	<0.1
Benzene	0.005	<0.025	<0.025	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	0.246	<0.025	<0.025	0.042

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #	56	57	58	59	60
Collector's Sample #	BC-8 (1-2)	BC-9 (1-2)	BC-10 (1-2)	BC-11 (1-2)	BC-12 (1-2)
Date Sampled	9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed	9/28/94	9/28/94	9/28/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg			
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.025	<0.025	<0.025	<0.025
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	0.147	0.066	0.349	0.086
Toluene	0.005	0.041	0.05	<0.025	0.039
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.005	0.281	<0.05	<0.05	0.1
Trichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025
Trichlorofluoromethane	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	0.531	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 25 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		61	62	63	64	65
Collector's Sample #		5-3 (4-6)	5-3 (18-20)	PB-1 (0.5-2.5)	PB-2 (0.5-2.5)	CD-4 (18-20)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Analyzed		9/30/94	9/30/94	9/30/94	9/30/94	9/30/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
Acetone	0.1	0.14	0.12	<0.1	<0.1	<0.1
Benzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		61	62	63	64	65
Collector's Sample #		5-3 (4-6)	5-3 (18-20)	PB-1 (0.5-2.5)	PB-2 (0.5-2.5)	CD-4 (18-20)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Analyzed		9/30/94	9/30/94	9/30/94	9/30/94	9/30/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	0.05	<0.025	<0.025	<0.025	<0.025
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Toluene	0.005	0.036	0.037	<0.025	<0.025	0.029
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.025	<0.025	<0.025	<0.025	<0.025
Trichlorofluoromethane	0.01	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.035	<0.035	<0.035	<0.035	<0.035
Xylenes(Total)	0.005	<0.025	<0.025	<0.025	<0.025	<0.025

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		66	69	70
Collector's Sample #		CD-5 (4-6)	BC-D1	BC-D2
Date Sampled		9/16/94	9/17/94	9/17/94
Date Analyzed		9/30/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg		
Acetone	0.1	0.22	<0.1	0.54
Benzene	0.005	0.029	<0.025	<0.025
Bromodichloromethane	0.005	<0.025	<0.025	<0.025
Bromoform	0.005	<0.025	<0.025	<0.025
Bromomethane	0.01	<0.025	<0.025	<0.025
Carbon Disulfide	0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.025	<0.025	<0.025
Chlorobenzene	0.005	<0.025	<0.025	<0.025
Chloroethane	0.01	<0.025	<0.025	<0.025
Chloroform	0.005	<0.025	<0.025	<0.025
Chloromethane	0.01	<0.025	<0.025	<0.025
Dibromochloromethane	0.005	<0.025	<0.025	<0.025
1,1-Dichloroethane	0.005	0.056	<0.025	<0.025
1,2-Dichloroethane	0.005	<0.025	<0.025	<0.025
1,1-Dichloroethene	0.005	<0.025	<0.025	<0.025
cis-1,2-Dichloroethene	0.005	3.6	<0.025	<0.025
trans-1,2-Dichloroethylene	0.005	<0.025	<0.025	<0.025
1,2-Dichloropropane	0.005	<0.025	<0.025	<0.025
cis-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025
trans-1,3-Dichloropropene	0.005	<0.025	<0.025	<0.025
Ethylbenzene	0.005	0.044	<0.025	1.3

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Volatiles Page 28 of 28

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240

Work Order #		66	69	70
Collector's Sample #		CD-5 (4-6)	BC-D1	BC-D2
Date Sampled		9/16/94	9/17/94	9/17/94
Date Analyzed		9/30/94	9/28/94	9/28/94
Analyte	Report Limit mg/Kg	Concentration mg/Kg		
2-Hexanone	0.05	<0.05	<0.05	28
Methylene Chloride	0.005	<0.025	<0.025	<0.025
2-Butanone (MEK)	0.1	<0.1	<0.1	0.2
4-Methyl-2-Pentanone	0.05	0.11	<0.05	0.4
Styrene	0.005	<0.025	<0.025	<0.025
1,1,2,2-Tetrachloroethane	0.005	<0.025	<0.025	<0.025
Tetrachloroethene (PERC)	0.005	<0.025	<0.025	<0.025
Toluene	0.005	0.45	0.028	0.41
1,1,1-Trichloroethane	0.005	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.005	<0.05	<0.05	<0.05
Trichloroethylene	0.005	<0.025	<0.025	<0.025
Trichlorofluoromethane	0.01	<0.05	<0.05	<0.05
1,1,2-Trichlorotrifluoroethane	0.005	<0.05	<0.05	<0.05
Vinyl Acetate	0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	2	<0.035	<0.035
Xylenes(Total)	0.005	0.38	<0.025	14

Analytical Review / Date:



Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 1 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	02	03	04	05	
Collector's Sample #	BC-2	EF-1 (1-3)	EF-1 (18-20)	EF-2 (1-3)	
Date Sampled	9/10/94	9/12/94	9/12/94	9/12/94	
Date Extracted	9/13/94	9/15/94	9/15/94	9/15/94	
Date Analyzed	9/22/94	9/22/94	9/22/94	9/23/94	
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Phenol	0.66	<0.66	<0.66	3.5	4.0
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66
2,2-Dichlorobenzene	0.66	<0.66	1.3	<0.66	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<0.66	3.4	<0.66	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<0.66	4.4	<0.66	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<0.74	4.8	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<0.66	1.90	<0.66	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3
1-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 2 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		02	03	04	05
Collector's Sample #		BC-2	EF-1 (1-3)	EF-1 (18-20)	EF-2 (1-3)
Date Sampled		9/10/94	9/12/94	9/12/94	9/12/94
Date Extracted		9/13/94	9/15/94	9/15/94	9/15/94
Date Analyzed		9/22/94	9/22/94	9/22/94	9/23/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	4.3	<0.66	<0.66	<0.66
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 3 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		02	03	04	05
Collector's Sample #		BC-2	EF-1 (1-3)	EF-1 (18-20)	EF-2 (1-3)
Date Sampled		9/10/94	9/12/94	9/12/94	9/12/94
Date Extracted		9/13/94	9/15/94	9/15/94	9/15/94
Date Analyzed		9/22/94	9/22/94	9/22/94	9/23/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.66
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	0.66	1.3	1.0	1.8	2.3
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	0.66	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	2.4	<0.66	9.4
Di-n-octylphthalate	0.66	<0.85	<0.85	<0.85	<0.85
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 4 of 42

ANALYTICAL RESULTS **Semi-Volatile Organics in Soil** EPA Method 8270

Work Order #		06	07	08	09	10
Collector's Sample #		EF-2 (18-20)	EF-3 (1-3)	EF-3 (18-20)	EF-4 (1-3)	EF-4 (18-20)
Date Sampled		9/12/94	9/12/94	9/12/94	9/12/94	9/12/94
Date Extracted		9/15/94	9/15/94	9/15/94	9/15/94	9/15/94
Date Analyzed		9/27/94	9/23/94	9/23/94	9/23/94	9/23/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	2.4	2.6	<0.66	4.5	5
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 5 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	06	07	08	09	10
Collector's Sample #	EF-2 (18-20)	EF-3 (1-3)	EF-3 (18-20)	EF-4 (1-3)	EF-4 (18-20)
Date Sampled	9/12/94	9/12/94	9/12/94	9/12/94	9/12/94
Date Extracted	9/15/94	9/15/94	9/15/94	9/15/94	9/15/94
Date Analyzed	9/27/94	9/23/94	9/23/94	9/23/94	9/23/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 6 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	06	07	08	09	10
Collector's Sample #	EF-2 (18-20)	EF-3 (1-3)	EF-3 (18-20)	EF-4 (1-3)	EF-4 (18-20)
Date Sampled	9/12/94	9/12/94	9/12/94	9/12/94	9/12/94
Date Extracted	9/15/94	9/15/94	9/15/94	9/15/94	9/15/94
Date Analyzed	9/27/94	9/23/94	9/23/94	9/23/94	9/23/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.66
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	0.66	<0.66	<0.66	4.4	4.2
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Pyrene	0.66	<0.66	<0.66	<0.66	0.66
Butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	0.66	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	2.4	<0.66	<0.66
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 7 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		11	12	13	14	15
Collector's Sample #		D-2 (1-3)	D-2 (18-20)	FF-1 (1-3)	FF-1 (18-20)	FF-2 (1-3)
Date Sampled		9/13/94	9/13/94	9/13/94	9/14/94	9/14/94
Date Extracted		9/15/94	9/15/94	9/15/94	9/16/94	9/16/94
Date Analyzed		9/23/94	9/26/94	9/26/94	9/27/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	1.8	1.9	2.6	5.1	3.1
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<0.66	<0.66	1.2	<0.66	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	0.66	<0.66	<0.66	1.4	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 8 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	11	12	13	14	15
Collector's Sample #	D-2 (1-3)	D-2 (18-20)	FF-1 (1-3)	FF-1 (18-20)	FF-2 (1-3)
Date Sampled	9/13/94	9/13/94	9/13/94	9/14/94	9/14/94
Date Extracted	9/15/94	9/15/94	9/15/94	9/16/94	9/16/94
Date Analyzed	9/23/94	9/26/94	9/26/94	9/27/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 9 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		11	12	13	14	15
Collector's Sample #		D-2 (1-3)	D-2 (18-20)	FF-1 (1-3)	FF-1 (18-20)	FF-2 (1-3)
Date Sampled		9/13/94	9/13/94	9/13/94	9/14/94	9/14/94
Date Extracted		9/15/94	9/15/94	9/15/94	9/16/94	9/16/94
Date Analyzed		9/23/94	9/26/94	9/26/94	9/27/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenanthrene	0.66	<0.66	<0.66	1.5	<0.66	<0.66
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	0.66	1.2	2.0	1.4	<0.66	<0.66
Fluoranthene	0.66	<0.66	<0.66	0.75	<0.66	<0.66
Pyrene	0.66	<0.66	<0.66	1.1	<0.66	<0.66
Butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	0.66	<0.66	<0.66	0.88	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<0.66	13.7	3.4	3.5
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page10 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		16	17	18	19	20
Collector's Sample #		FF-2 (18-20)	FF-3 (1-3)	FF-3 (18-20)	10-1 (1-3)	10-1 (18-20)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Extracted		9/16/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed		9/27/94	9/23/94	9/23/94	9/23/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	5.1	<0.66	<0.66	3.0	3.4
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 11 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	16	17	18	19	20
Collector's Sample #	FF-2 (18-20)	FF-3 (1-3)	FF-3 (18-20)	10-1 (1-3)	10-1 (18-20)
Date Sampled	9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Extracted	9/16/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed	9/27/94	9/23/94	9/23/94	9/23/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 12 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	16	17	18	19	20
Collector's Sample #	FF-2 (18-20)	FF-3 (1-3)	FF-3 (18-20)	10-1 (1-3)	10-1 (18-20)
Date Sampled	9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Extracted	9/16/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed	9/27/94	9/23/94	9/23/94	9/23/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.66
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	0.66	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<0.66	<0.66	2.8
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 13 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		21	22	23	24	25
Collector's Sample #		CD-1 (1-3)	10-2 (1-3)	10-2 (18-20)	W-5 (1-3)	W-5 (18-20)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Extracted		9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed		9/27/94	9/26/94	9/26/94	9/29/94	9/29/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	<3.3	2.8	6.8	<0.66	3.8
2-Chlorophenol	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	1.3	<6.5	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<3.7	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<6.5	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 14 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		21	22	23	24	25
Collector's Sample #		CD-1 (1-3)	10-2 (1-3)	10-2 (18-20)	W-5 (1-3)	W-5 (18-20)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Extracted		9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed		9/27/94	9/26/94	9/26/94	9/29/94	9/29/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Hexachlorocyclopentadiene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	3.3	<16.5	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<16.5	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<16.5	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
4-Chlorophenyl-phenylether	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<6.5	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<3.3	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<16.5	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 15 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	21	22	23	24	25
Collector's Sample #	CD-1 (1-3)	10-2 (1-3)	10-2 (18-20)	W-5 (1-3)	W-5 (18-20)
Date Sampled	9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Extracted	9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed	9/27/94	9/26/94	9/26/94	9/29/94	9/29/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Phenanthrene	0.66	<3.3	<0.66	<0.66	<0.66
Anthracene	0.66	<3.3	<0.66	<0.66	<0.66
Di-n-butylphthalate	0.66	<3.3	<0.66	<0.66	<0.66
Fluoranthene	0.66	8.2	<0.66	<0.66	<0.66
Pyrene	0.66	7.9	<0.66	<0.66	<0.66
Butylbenzylphthalate	0.66	<3.3	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<6.5	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<3.3	<0.66	<0.66	<0.66
Chrysene	0.66	<3.3	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	17.4	7.5	5.2	<0.66
Di-n-octylphthalate	0.66	<3.3	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	0.66	<3.3	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	8.8	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<3.3	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<3.3	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<3.3	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<3.3	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<4.25	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<6.5	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 16 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		26	27	28	29	30
Collector's Sample #		W-1 (1-3)	W-1 (18-20)	CD-2 (1-3)	CD-3 (1-3)	6-1 (1-3)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/15/94
Date Extracted		9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed		9/26/94	9/26/94	9/26/94	9/26/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	<0.66	2.5	<0.66	<0.66	2.4
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 17 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		26	27	28	29	30
Collector's Sample #		W-1 (1-3)	W-1 (18-20)	CD-2 (1-3)	CD-3 (1-3)	6-1 (1-3)
Date Sampled		9/14/94	9/14/94	9/14/94	9/14/94	9/15/94
Date Extracted		9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed		9/26/94	9/26/94	9/26/94	9/26/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
3-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 18 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	26	27	28	29	30
Collector's Sample #	W-1 (1-3)	W-1 (18-20)	CD-2 (1-3)	CD-3 (1-3)	6-1 (1-3)
Date Sampled	9/14/94	9/14/94	9/14/94	9/14/94	9/15/94
Date Extracted	9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed	9/26/94	9/26/94	9/26/94	9/26/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.66
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	0.66	<0.66	1.5	1.6	3.7
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	0.66	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<0.66	<0.66	<0.66
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 19 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		31	32	33	34	35
Collector's Sample #		6-1 (18-20)	5-1 (1-3)	5-1 (18-20)	5-2 (1-3)	5-2 (18-20)
Date Sampled		9/15/94	9/15/94	9/15/94	9/15/94	9/15/94
Date Extracted		9/17/94	9/17/94	9/17/94	9/20/94	9/20/94
Date Analyzed		9/26/94	9/26/94	9/27/94	9/27/94	9/28/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	6.4	4.5	5.9	1.8	<3.3
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3	<6.5
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<0.74	<3.7
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Naphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3	<6.5
2-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*

* SIM Results reported for these compounds

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 20 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		31	32	33	34	35
Collector's Sample #		6-1 (18-20)	5-1 (1-3)	5-1 (18-20)	5-2 (1-3)	5-2 (18-20)
Date Sampled		9/15/94	9/15/94	9/15/94	9/15/94	9/15/94
Date Extracted		9/17/94	9/17/94	9/17/94	9/20/94	9/20/94
Date Analyzed		9/26/94	9/26/94	9/27/94	9/27/94	9/28/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3	<16.5
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3	<16.5
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3	<16.5
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Diethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3	<6.5
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3	<16.5

* SIM Results reported for these compounds

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 21 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		31	32	33	34	35
Collector's Sample #		6-1 (18-20)	5-1 (1-3)	5-1 (18-20)	5-2 (1-3)	5-2 (18-20)
Date Sampled		9/15/94	9/15/94	9/15/94	9/15/94	9/15/94
Date Extracted		9/17/94	9/17/94	9/17/94	9/20/94	9/20/94
Date Analyzed		9/26/94	9/26/94	9/27/94	9/27/94	9/28/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Di-n-butylphthalate	0.66	3.7	2.2	3.8	<0.66	<3.3
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
n-butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3	<6.5
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Chrysene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<3.3
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66	<0.5*
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85	<4.25
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3	<6.5

* SIM Results reported for these compounds

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 22 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		36	37	38	39	40
Collector's Sample #		W-4 (1-3)	W-4 (18-20)	W-6 (1-3)	W-6 (18-20)	D-1 (1-3)
Date Sampled		9/15/94	9/15/94	9/15/94	9/15/94	9/16/94
Date Extracted		9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed		9/27/94	9/27/94	9/27/94	9/28/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	5.4	11.4	<0.66	7.9	<0.66
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 23 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	36	37	38	39	40
Collector's Sample #	W-4 (1-3)	W-4 (18-20)	W-6 (1-3)	W-6 (18-20)	D-1 (1-3)
Date Sampled	9/15/94	9/15/94	9/15/94	9/15/94	9/16/94
Date Extracted	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed	9/27/94	9/27/94	9/27/94	9/28/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 24 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	36	37	38	39	40	
Collector's Sample #	W-4 (1-3)	W-4 (18-20)	W-6 (1-3)	W-6 (18-20)	D-1 (1-3)	
Date Sampled	9/15/94	9/15/94	9/15/94	9/15/94	9/16/94	
Date Extracted	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	
Date Analyzed	9/27/94	9/27/94	9/27/94	9/28/94	9/27/94	
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.66	
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66	
Di-n-butylphthalate	0.66	5	6.3	5.7	<0.66	2.7
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 25 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	41	42	43	44	45	
Collector's Sample #	D-1 (18-20)	D-3 (4-6)	D-3 (18-20)	W-7 (3.5-5.5)	W-7 (18-20)	
Date Sampled	9/16/94	9/16/94	9/16/94	9/16/94	9/16/94	
Date Extracted	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	
Date Analyzed	9/30/94	9/27/94	9/27/94	9/29/94	9/27/94	
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	9.6	5.2	7.2	5.6	8.3
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 26 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		41	42	43	44	45
Collector's Sample #		D-1 (18-20)	D-3 (4-6)	D-3 (18-20)	W-7 (3.5-5.5)	W-7 (18-20)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Extracted		9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed		9/30/94	9/27/94	9/27/94	9/29/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	<0.66	<0.66	<0.66	1.9	1.2
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 27 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		41	42	43	44	45
Collector's Sample #		D-1 (18-20)	D-3 (4-6)	D-3 (18-20)	W-7 (3.5-5.5)	W-7 (18-20)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Extracted		9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed		9/30/94	9/27/94	9/27/94	9/29/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	0.66	<0.66	<0.66	6.4	<0.66	<0.66
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 28 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	46	47	48	49	50	
Collector's Sample #	W-3 (4-6)	W-3 (18-20)	W-2 (4-6)	W-2 (18-20)	BC-2A (1-2)	
Date Sampled	9/16/94	9/16/94	9/16/94	9/16/94	9/17/94	
Date Extracted	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	
Date Analyzed	9/27/94	9/30/94	9/28/94	9/28/94	9/26/94	
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	2.2	7.2	<0.66	6.4	<0.66
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 29 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		46	47	48	49	50
Collector's Sample #		W-3 (4-6)	W-3 (18-20)	W-2 (4-6)	W-2 (18-20)	BC-2A (1-2)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/17/94
Date Extracted		9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed		9/27/94	9/30/94	9/28/94	9/28/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	1.3	2.1	1.7	1.6	<0.66
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 30 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	46	47	48	49	50
Collector's Sample #	W-3 (4-6)	W-3 (18-20)	W-2 (4-6)	W-2 (18-20)	BC-2A (1-2)
Date Sampled	9/16/94	9/16/94	9/16/94	9/16/94	9/17/94
Date Extracted	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed	9/27/94	9/30/94	9/28/94	9/28/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.66
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	0.66	<0.66	<0.66	<0.66	5.1
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	0.66	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<0.66	<0.66	<0.66
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 31 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		51	52	53	54	55
Collector's Sample #		BC-3 (1-2)	BC-4 (1-2)	BC-5 (1-2)	BC-6 (1-2)	BC-7 (1-2)
Date Sampled		9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Extracted		9/20/94	9/20/94	9/20/94	9/27/94	9/20/94
Date Analyzed		9/26/94	9/26/94	9/26/94	9/27/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<6.5	<1.3
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<3.7	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Naphthalene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<6.5	<1.3
2-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66

* SIM Results reported for these compounds

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 32 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		51	52	53	54	55
Collector's Sample #		BC-3 (1-2)	BC-4 (1-2)	BC-5 (1-2)	BC-6 (1-2)	BC-7 (1-2)
Date Sampled		9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Extracted		9/20/94	9/20/94	9/20/94	9/27/94	9/20/94
Date Analyzed		9/26/94	9/26/94	9/26/94	9/27/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<16.5	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<16.5	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<16.5	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Diethylphthalate	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<6.5	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<16.5	<3.3

* SIM Results reported for these compounds

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 33 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	51	52	53	54	55	
Collector's Sample #	BC-3 (1-2)	BC-4 (1-2)	BC-5 (1-2)	BC-6 (1-2)	BC-7 (1-2)	
Date Sampled	9/17/94	9/17/94	9/17/94	9/17/94	9/17/94	
Date Extracted	9/20/94	9/20/94	9/20/94	9/27/94	9/20/94	
Date Analyzed	9/26/94	9/26/94	9/26/94	9/27/94	9/26/94	
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Anthracene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Di-n-butylphthalate	0.66	3.7	5.6	5	9.1	3.3
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Pyrene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Butylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<6.5	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Chrysene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<0.66	<0.66	56.1	4
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<3.3	<0.66
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.5*	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<4.25	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<6.5	<1.3

* SIM Results reported for these compounds

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 34 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	56	57	58	59	60
Collector's Sample #	BC-8 (1-2)	BC-9 (1-2)	BC-10 (1-2)	BC-11 (1-2)	BC-12 (1-2)
Date Sampled	9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Extracted	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed	9/26/94	9/26/94	9/26/94	9/26/94	9/24/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Phenol	0.66	<3.3	<3.3	<3.3	<0.66
2-Chlorophenol	0.66	<3.3	<3.3	<3.3	<0.66
1,3-Dichlorobenzene	0.66	<3.3	<3.3	<3.3	<0.66
1,4-Dichlorobenzene	0.66	<3.3	<3.3	<3.3	<0.66
1,2-Dichlorobenzene	0.66	<3.3	<3.3	<3.3	<0.66
Benzyl Alcohol	1.3	<6.5	<6.5	<6.5	<1.3
2-Methylphenol	0.66	<3.3	<3.3	<3.3	<0.66
Hexachloroethane	0.66	<3.3	<3.3	<3.3	<0.66
4-Methylphenol	0.66	<3.3	<3.3	<3.3	<0.66
Nitrobenzene	0.66	<3.3	<3.3	<3.3	<0.66
2-Nitrophenol	0.66	<3.3	<3.3	<3.3	<0.66
Isophorone	0.66	<3.3	<3.3	<3.3	<0.66
2,4-Dimethylphenol	0.74	<3.7	<3.7	<3.7	<0.74
bis(2-Chloroethoxy)Methane	0.66	<3.3	<3.3	<3.3	<0.66
2,4-Dichlorophenol	0.66	<3.3	<3.3	<3.3	<0.66
1,2,4-Trichlorobenzene	0.66	<3.3	<3.3	<3.3	<0.66
Naphthalene	0.66	1.1*	<0.55*	<0.55*	<0.66
Hexachlorobutadiene	0.66	<3.3	<3.3	<3.3	<0.66
4-Chloro-3-Methylphenol	1.3	<6.5	<6.5	<6.5	<1.3
2-Methylnaphthalene	0.66	<0.55*	<0.55*	<0.55*	<0.66

* SIM Results reported for these compounds

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 35 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	56	57	58	59	60
Collector's Sample #	BC-8 (1-2)	BC-9 (1-2)	BC-10 (1-2)	BC-11 (1-2)	BC-12 (1-2)
Date Sampled	9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Extracted	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed	9/26/94	9/26/94	9/26/94	9/26/94	9/24/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Hexachlorocyclopentadiene	0.66	<3.3	<3.3	<3.3	<0.66
2,4,6-Trichlorophenol	0.66	<3.3	<3.3	<3.3	<0.66
2,4,5-Trichlorophenol	0.66	<3.3	<3.3	<3.3	<0.66
2-Chloronaphthalene	0.66	<0.5*	<0.5*	<0.5*	<0.66
2-Nitroaniline	3.3	<16.5	<16.5	<16.5	<3.3
Dimethylphthalate	0.66	<3.3	<3.3	<3.3	<0.66
Acenaphthylene	0.66	<0.5*	<0.5*	<0.5*	<0.66
4-Nitroaniline	3.3	<16.5	<16.5	<16.5	<3.3
Acenaphthene	0.66	<0.5*	<0.5*	<0.5*	<0.66
2,4-Dinitrophenol	0.66	<3.3	<3.3	<3.3	<0.66
Dibenzofuran	0.66	<3.3	<3.3	<3.3	<0.66
4-Nitrophenol	3.3	<16.5	<16.5	<16.5	<3.3
2,4-Dinitrotoluene	0.66	<3.3	<3.3	<3.3	<0.66
Diethylphthalate	0.66	<3.3	<3.3	<3.3	1.6
4-Chlorophenyl-phenylether	0.66	<3.3	<3.3	<3.3	<0.66
Fluorene	0.66	<0.5*	<0.5*	<0.5*	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<6.5	<6.5	<6.5	<1.3
4-Bromophenyl-phenylether	0.66	<3.3	<3.3	<3.3	<0.66
Hexachlorobenzene	0.66	<3.3	<3.3	<3.3	<0.66
Pentachlorophenol	3.3	<16.5	<16.5	<16.5	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 36 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	56	57	58	59	60	
Collector's Sample #	BC-8 (1-2)	BC-9 (1-2)	BC-10 (1-2)	BC-11 (1-2)	BC-12 (1-2)	
Date Sampled	9/17/94	9/17/94	9/17/94	9/17/94	9/17/94	
Date Extracted	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	
Date Analyzed	9/26/94	9/26/94	9/26/94	9/26/94	9/24/94	
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenanthrene	0.66	<0.5*	<0.5*	<0.5*	<0.5*	<0.66
Anthracene	0.66	<0.5*	<0.5*	<0.5*	<0.5*	<0.66
Di-n-butylphthalate	0.66	11.9	4.6	6.6	6.3	3.5
Fluoranthene	0.66	<0.5*	<0.5*	<0.5*	0.6*	<0.66
Pyrene	0.66	<0.5*	<0.5*	<0.5*	0.7*	<0.66
Butylbenzylphthalate	0.66	<3.3	8.6	<3.3	<3.3	<0.66
3,3'-Dichlorobenzidine	1.3	<6.5	<6.5	<6.5	<6.5	<1.3
Benzo(a)anthracene	0.66	<0.5*	<0.5*	<0.5*	<0.5*	<0.66
Chrysene	0.66	<0.5*	<0.5*	<0.5*	0.62*	<0.66
bis(2-Ethylhexyl)phthalate	0.66	16.4	11.3	9.2	15.4	<0.66
Di-n-octylphthalate	0.66	<3.3	<3.3	<3.3	<3.3	<0.66
Benzo(b)fluoranthene	0.66	<0.5*	<0.5*	<0.5*	<0.5*	<0.66
Benzo(k)fluoranthene	0.66	<0.5*	<0.5*	<0.5*	<0.5*	<0.66
Benzo(a)pyrene	0.66	<0.5*	<0.5*	<0.5*	<0.5*	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.5*	<0.5*	<0.5*	<0.5*	<0.66
Dibenz(a,h)anthracene	0.66	<0.5*	<0.5*	<0.5*	<0.5*	<0.66
Benzo(g,h,i)perylene	0.66	<0.5*	<0.5*	<0.5*	<0.5*	<0.66
2,6-Dinitrotoluene	0.66	<4.25	<4.25	<4.25	<4.25	<0.85
4-Chloroaniline	1.3	<6.5	<6.5	<6.5	<6.5	<1.3

* SIM Results reported for these compounds.

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 37 of 42

ANALYTICAL RESULTS **Semi-Volatile Organics in Soil** EPA Method 8270

Work Order #		61	62	63	64	65
Collector's Sample #		5-3 (4-6)	5-3 (18-20)	PB-1 (0.5-2.5)	PB-2 (0.5-2.5)	CD-4 (18-20)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Extracted		9/20/94	9/20/94	9/21/94	9/21/94	9/21/94
Date Analyzed		9/29/94	9/29/94	9/26/94	9/29/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenol	0.66	6	4.3	<0.66	<0.66	4.5
2-Chlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	0.74	<0.74	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 38 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	61	62	63	64	65
Collector's Sample #	5-3 (4-6)	5-3 (18-20)	PB-1 (0.5-2.5)	PB-2 (0.5-2.5)	CD-4 (18-20)
Date Sampled	9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Extracted	9/20/94	9/20/94	9/21/94	9/21/94	9/21/94
Date Analyzed	9/29/94	9/29/94	9/26/94	9/29/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg			
Hexachlorocyclopentadiene	0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2,4,5-Trichlorophenol	0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	0.66	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	0.66	1.8	1.4	<0.66	<0.66
4-Chlorophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	3.3	<3.3	<3.3	<3.3	<3.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 39 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		61	62	63	64	65
Collector's Sample #		5-3 (4-6)	5-3 (18-20)	PB-1 (0.5-2.5)	PB-2 (0.5-2.5)	CD-4 (18-20)
Date Sampled		9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Extracted		9/20/94	9/20/94	9/21/94	9/21/94	9/21/94
Date Analyzed		9/29/94	9/29/94	9/26/94	9/29/94	9/27/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg				
Phenanthrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Di-n-octylbenzylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<0.66	<0.66	3.9	<0.66
Di-n-octylphthalate	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	0.66	<0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	0.66	<0.85	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	1.3	<1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 40 of 42

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #	66	69	70	
Collector's Sample #	CD-5 (4-6)	BC-D1	BC-D2	
Date Sampled	9/16/94	9/17/94	9/17/94	
Date Extracted	9/21/94	9/20/94	9/20/94	
Date Analyzed	9/29/94	9/26/94	9/26/94	
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg		
Phenol	0.66	5.6	<66	<33
2-Chlorophenol	0.66	<0.66	<66	<33
1,3-Dichlorobenzene	0.66	<0.66	<66	<33
1,4-Dichlorobenzene	0.66	<0.66	<66	<33
1,2-Dichlorobenzene	0.66	<0.66	<66	<33
Benzyl Alcohol	1.3	<1.3	<130	<65
2-Methylphenol	0.66	<0.66	<66	<33
Hexachloroethane	0.66	<0.66	<66	<33
4-Methylphenol	0.66	<0.66	<66	<33
Nitrobenzene	0.66	<0.66	<66	<33
2-Nitrophenol	0.66	<0.66	<66	<33
Isophorone	0.66	<0.66	<66	12500
2,4-Dimethylphenol	0.74	<0.74	<74	<37
bis(2-Chloroethoxy)Methane	0.66	<0.66	<66	<33
2,4-Dichlorophenol	0.66	<0.66	<66	<33
1,2,4-Trichlorobenzene	0.66	<0.66	<66	<33
Naphthalene	0.66	<0.66	<0.5*	3320
Hexachlorobutadiene	0.66	<0.66	<66	<33
4-Chloro-3-Methylphenol	1.3	<1.3	<130	<65
2-Methylnaphthalene	0.66	<0.66	<0.5*	754

* SIM Results reported for these compounds

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 41 of 42

ANALYTICAL RESULTS
Semi-Volatile Organics in Soil
 EPA Method 8270

Work Order #		66	69	70
Collector's Sample #		CD-5 (4-6)	BC-D1	BC-D2
Date Sampled		9/16/94	9/17/94	9/17/94
Date Extracted		9/21/94	9/20/94	9/20/94
Date Analyzed		9/29/94	9/26/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg		
Hexachlorocyclopentadiene	0.66	<0.66	<66	<33
2,4,6-Trichlorophenol	0.66	<0.66	<66	<33
2,4,5-Trichlorophenol	0.66	<0.66	<66	<33
2-Chloronaphthalene	0.66	<0.66	<0.5*	<33
3-Nitroaniline	3.3	<3.3	<330	<165
Dimethylphthalate	0.66	<0.66	<66	<33
Acenaphthylene	0.66	<0.66	<0.5*	<33
4-Nitroaniline	3.3	<3.3	<330	<165
Acenaphthene	0.66	<0.66	<0.5*	<33
2,4-Dinitrophenol	0.66	<0.66	<66	<33
Dibenzofuran	0.66	<0.66	<66	<33
4-Nitrophenol	3.3	<3.3	<330	<165
2,4-Dinitrotoluene	0.66	<0.66	<66	<33
Diethylphthalate	0.66	<0.66	<66	<33
4-Chlorophenyl-phenylether	0.66	<0.66	<66	<33
Fluorene	0.66	<0.66	<0.5*	<33
2-Methyl-4,6-Dinitrophenol	1.3	<1.3	<130	<65
4-Bromophenyl-phenylether	0.66	<0.66	<30	<15
Hexachlorobenzene	0.66	<0.66	<66	<33
Pentachlorophenol	3.3	<3.3	<330	<165

* SIM Results reported for these compounds

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles

Page 42 of 42

ANALYTICAL RESULTS


Semi-Volatile Organics in Soil

EPA Method 8270

Work Order #		66	69	70
Collector's Sample #		CD-5 (4-6)	BC-D1	BC-D2
Date Sampled		9/16/94	9/17/94	9/17/94
Date Extracted		9/21/94	9/20/94	9/20/94
Date Analyzed		9/29/94	9/26/94	9/26/94
Analyte	Reporting Limit mg/Kg	Concentration mg/Kg		
Phenanthrene	0.66	<0.66	<0.5*	<33
Anthracene	0.66	<0.66	<0.5*	<33
Di-n-butylphthalate	0.66	<0.66	<66	68.8
Fluoranthene	0.66	<0.66	<0.5*	<33
Pyrene	0.66	<0.66	<0.5*	<33
Butylbenzylphthalate	0.66	<0.66	<66	<33
3,3'-Dichlorobenzidine	1.3	<1.3	<130	<65
Benzo(a)anthracene	0.66	<0.66	<0.5*	<33
Chrysene	0.66	<0.66	<0.5*	<33
bis(2-Ethylhexyl)phthalate	0.66	<0.66	<66	<33
Di-n-octylphthalate	0.66	<0.66	<66	<33
Benzo(b)fluoranthene	0.66	<0.66	<0.5*	<33
Benzo(k)fluoranthene	0.66	<0.66	<0.5*	<33
Benzo(a)pyrene	0.66	<0.66	<0.5*	<33
Indeno(1,2,3-cd)pyrene	0.66	<0.66	<0.5*	<33
Dibenz(a,h)anthracene	0.66	<0.66	<0.5*	<33
Benzo(g,h,i)perylene	0.66	<0.66	<0.5*	<33
2,6-Dinitrotoluene	0.66	<0.85	<85	<42.5
4-Chloroaniline	1.3	<1.3	<130	<65

* SIM Results reported for these compounds.

Analytical Review / Date:

 2/17/95

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

PCBs


Page 1 of 1

ANALYTICAL RESULTS

Polychlorinated Biphenyls

Work Order #	Collector's Sample #	Date Sampled	Date Extracted	Date Analyzed	Concentration mg/Kg
02	BC-2	9/10/94	9/19/94	9/19/94	0.84
03	EF-1 (1-3)	9/12/94	9/26/94	10/7/94	10.91
38	W-6 (1-3)	9/15/94	9/19/94	9/20/94	<0.05
40	D-1 (1-3)	9/16/94	9/19/94	9/19/94	<0.05
48	W-2 (4-6)	9/16/94	9/19/94	10/10/94	<0.05
50	BC-2A (1-2)	9/17/94	9/29/94	10/4/94	<0.05
52	BC-4 (1-2)	9/17/94	9/29/94	10/5/94	0.72
53	BC-5 (1-2)	9/17/94	9/29/94	10/7/94	<1
56	BC-8 (1-2)	9/17/94	9/29/94	10/5/94	196
59	BC-11 (1-2)	9/17/94	9/28/94	10/5/94	73.7
66	CD-5 (4-6)	9/16/94	9/19/94	9/20/94	<0.05
69	BC-D1	9/17/94	9/28/94	10/5/94	46.26

Analytical Review / Date:

 2/17/95

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			02	03	04	05
Collector's Sample #			BC-2	EF-1 (1-3)	EF-1 (18-20)	EF-2 (1-3)
Date Sampled			9/10/94	9/12/94	9/12/94	9/12/94
Date Leached			9/15/94	9/15/94	9/15/94	9/15/94
Date Analyzed (EPA Method 7060)			9/19/94	9/23/94	9/19/94	9/19/94
Date Analyzed (EPA Method 6010)			9/20/94	9/20/94	9/20/94	9/24/94
Date Analyzed (EPA Method 7131)			9/19/94	9/27/94	9/19/94	9/19/94
Date Analyzed (EPA Method 7421)			9/19/94	9/23/94	9/19/94	9/19/94
Date Analyzed (EPA Method 7470)			9/16/94	9/16/94	9/16/94	9/16/94
Date Analyzed (EPA Method 7740)			9/21/94	9/28/94	9/21/94	9/21/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L			
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2
Cadmium	7131	0.005	0.00754	<0.005	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	<0.0075	0.011	0.0078	<0.0075
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			06	07	08	09	10
Collector's Sample #			EF-2 (18-20)	EF-3 (1-3)	EF-3 (18-20)	EF-4 (1-3)	EF-4 (18-20)
Date Sampled			9/12/94	9/12/94	9/12/94	9/12/94	9/12/94
Date Leached			9/15/94	9/15/94	9/17/94	9/17/94	9/17/94
Date Analyzed (EPA Method 7060)			9/19/94	9/23/94	9/23/94	9/23/94	9/23/94
Date Analyzed (EPA Method 6010)			9/20/94	9/24/94	9/20/94	9/20/94	9/20/94
Date Analyzed (EPA Method 7131)			9/19/94	9/27/94	9/27/94	9/27/94	9/27/94
Date Analyzed (EPA Method 7421)			9/19/94	9/23/94	9/27/94	9/23/94	9/27/94
Date Analyzed (EPA Method 7470)			9/16/94	9/16/94	9/20/94	9/20/94	9/20/94
Date Analyzed (EPA Method 7740)			9/21/94	10/8/94	9/28/94	9/28/94	9/28/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	0.008	<0.005	0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	0.0086	<0.0075	<0.0075	0.0386	<0.0075
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			11	12	13	14	15
Collector's Sample #			D-2 (1-3)	D-2 (18-20)	FF-1 (1-3)	FF-1 (18-20)	FF-2 (1-3)
Date Sampled			9/13/94	9/13/94	9/13/94	9/14/94	9/14/94
Date Leached			9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed (EPA Method 7060)			9/23/94	9/23/94	9/23/94	9/23/94	9/23/94
Date Analyzed (EPA Method 6010)			9/20/94	9/20/94	9/20/94	9/24/94	9/24/94
Date Analyzed (EPA Method 7131)			9/27/94	9/27/94	9/27/94	9/27/94	9/30/94
Date Analyzed (EPA Method 7421)			9/23/94	9/27/94	9/23/94	9/29/94	10/6/94
Date Analyzed (EPA Method 7470)			9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed (EPA Method 7740)			9/28/94	9/28/94	9/28/94	10/4/94	9/28/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	0.0156	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	<0.0075	0.0254	0.014	0.0088	0.014
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02

TCLP Metals Page 4 of 11

Project ID Name: Dolton, IL

SK Lab Project #: 94-063

Date Reported: 2/17/95

ANALYTICAL RESULTS**Metals in TCLP Leachate**

Work Order #			16	17	18	19	20
Collector's Sample #			FF-2 (18-20)	FF-3 (1-3)	FF-3 (18-20)	10-1 (1-3)	10-1 (18-20)
Date Sampled			9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Leached			9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Analyzed (EPA Method 7060)			9/23/94	10/4/94	9/23/94	9/23/94	9/23/94
Date Analyzed (EPA Method 6010)			9/20/94	9/24/94	9/20/94	9/20/94	9/20/94
Date Analyzed (EPA Method 7131)			9/27/94	9/27/94	9/27/94	9/27/94	9/27/94
Date Analyzed (EPA Method 7421)			9/27/94	9/27/94	9/27/94	9/23/94	9/27/94
Date Analyzed (EPA Method 7470)			9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed (EPA Method 7740)			9/28/94	9/29/94	9/28/94	9/28/94	9/28/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	0.0254	0.1550	0.013	<0.0075	0.015
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			21	22	23	24	25
Collector's Sample #			CD-1 (1-3)	10-2 (1-3)	10-2 (18-20)	W-5 (1-3)	W-5 (18-20)
Date Sampled			9/14/94	9/14/94	9/14/94	9/14/94	9/14/94
Date Leached			9/17/94	9/17/94	9/17/94	9/20/94	9/20/94
Date Analyzed (EPA Method 7060)			10/5/94	9/23/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 6010)			9/20/94	9/20/94	9/20/94	9/24/94	9/23/94
Date Analyzed (EPA Method 7131)			9/27/94	9/27/94	9/27/94	9/30/94	9/30/94
Date Analyzed (EPA Method 7421)			9/27/94	9/27/94	9/27/94	9/29/94	9/29/94
Date Analyzed (EPA Method 7470)			9/20/94	9/20/94	9/20/94	9/22/94	9/22/94
Date Analyzed (EPA Method 7740)			9/29/94	9/29/94	9/29/94	10/4/94	9/29/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	0.0292	0.023	0.010	<0.0075	<0.0075
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02

TCLP Metals Page 6 of 11

Project ID Name: Dolton, IL

SK Lab Project #: 94-063

Date Reported: 2/17/95

ANALYTICAL RESULTS**Metals in TCLP Leachate**

Work Order #			26	27	28	29	30
Collector's Sample #			W-1 (1-3)	W-1 (18-20)	CD-2 (1-3)	CD-3 (1-3)	6-1 (1-3)
Date Sampled			9/14/94	9/14/94	9/14/94	9/14/94	9/15/94
Date Leached			9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed (EPA Method 7060)			9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 6010)			9/23/94	9/23/94	9/23/94	9/23/94	9/23/94
Date Analyzed (EPA Method 7131)			9/30/94	9/30/94	9/30/94	9/30/94	9/30/94
Date Analyzed (EPA Method 7421)			9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 7470)			9/22/94	9/22/94	9/22/94	9/22/94	9/22/94
Date Analyzed (EPA Method 7740)			9/29/94	10/4/94	10/4/94	10/4/94	10/4/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			31	32	33	34	35
Collector's Sample #			6-1 (18-20)	5-1 (1-3)	5-1 (18-20)	5-2 (1-3)	5-2 (18-20)
Date Sampled			9/15/94	9/15/94	9/15/94	9/15/94	9/15/94
Date Leached			9/20/94	9/29/94	9/20/94	9/20/94	9/20/94
Date Analyzed (EPA Method 7060)			10/4/94	10/7/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 6010)			9/24/94	10/6/94	9/23/94	9/23/94	9/23/94
Date Analyzed (EPA Method 7131)			9/27/94	10/6/94	9/27/94	9/30/94	9/27/94
Date Analyzed (EPA Method 7421)			10/7/94	10/6/94	9/27/94	9/29/94	9/27/94
Date Analyzed (EPA Method 7470)			9/22/94	10/3/94	9/22/94	9/22/94	9/22/94
Date Analyzed (EPA Method 7740)			9/29/94	10/6/94	9/29/94	10/4/94	9/29/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			36	37	38	39	40
Collector's Sample #			W-4 (1-3)	W-4 (18-20)	W-6 (1-3)	W-6 (18-20)	D-1 (1-3)
Date Sampled			9/15/94	9/15/94	9/15/94	9/15/94	9/16/94
Date Leached			9/20/94	9/20/94	9/20/94	9/21/94	9/21/94
Date Analyzed (EPA Method 7060)			9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 6010)			9/23/94	9/23/94	9/23/94	9/23/94	9/24/94
Date Analyzed (EPA Method 7131)			9/30/94	9/30/94	9/30/94	9/30/94	9/26/94
Date Analyzed (EPA Method 7421)			9/29/94	9/29/94	9/29/94	9/29/94	9/26/94
Date Analyzed (EPA Method 7470)			9/22/94	9/22/94	9/22/94	9/22/94	9/22/94
Date Analyzed (EPA Method 7740)			9/29/94	9/29/94	10/4/94	10/5/94	10/8/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.011
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			41	42	43	44	45
Collector's Sample #			D-1 (18-20)	D-3 (4-6)	D-3 (18-20)	W-7 (3.5-5.5)	W-7 (18-20)
Date Sampled			9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Leached			9/21/94	9/22/94	9/22/94	9/22/94	9/21/94
Date Analyzed (EPA Method 7060)			9/29/94	10/1/94	9/29/94	10/1/94	9/29/94
Date Analyzed (EPA Method 6010)			9/23/94	9/29/94	9/27/94	9/27/94	9/23/94
Date Analyzed (EPA Method 7131)			9/30/94	9/30/94	9/30/94	9/30/94	9/30/94
Date Analyzed (EPA Method 7421)			10/5/94	10/3/94	9/29/94	10/3/94	10/5/94
Date Analyzed (EPA Method 7470)			9/22/94	9/26/94	9/26/94	9/26/94	9/22/94
Date Analyzed (EPA Method 7740)			10/5/94	10/5/94	10/5/94	10/5/94	10/5/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	<0.0075	<0.0075	0.010	<0.0075	<0.0075
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			46	47	48	49	61
Collector's Sample #			W-3 (4-6)	W-3 (18-20)	W-2 (4-6)	W-2 (18-20)	5-3 (4-6)
Date Sampled			9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Leached			9/21/94	9/27/94	9/27/94	9/27/94	9/27/94
Date Analyzed (EPA Method 7060)			9/29/94	10/7/94	10/7/94	10/7/94	10/7/94
Date Analyzed (EPA Method 6010)			9/23/94	9/29/94	10/6/94	9/29/94	9/29/94
Date Analyzed (EPA Method 7131)			9/30/94	10/6/94	10/6/94	10/6/94	10/6/94
Date Analyzed (EPA Method 7421)			9/29/94	10/6/94	10/7/94	10/6/94	10/6/94
Date Analyzed (EPA Method 7470)			9/22/94	9/29/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 7740)			10/5/94	10/6/94	10/6/94	10/6/94	10/6/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

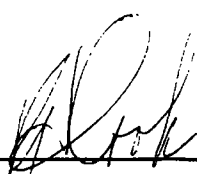
Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			62	63	64	65	66
Collector's Sample #			5-3 (18-20)	PB-1 (0.5-2.5)	PB-2 (0.5-2.5)	CD-4 (18-20)	CD-5 (4-6)
Date Sampled			9/16/94	9/16/94	9/16/94	9/16/94	9/16/94
Date Leached			9/21/94	9/27/94	9/21/94	9/22/94	9/22/94
Date Analyzed (EPA Method 7060)			9/29/94	10/7/94	9/29/94	10/1/94	10/1/94
Date Analyzed (EPA Method 6010)			9/23/94	9/29/94	9/23/94	9/27/94	9/27/94
Date Analyzed (EPA Method 7131)			9/30/94	10/6/94	9/30/94	9/30/94	9/30/94
Date Analyzed (EPA Method 7421)			10/5/94	10/6/94	10/5/94	10/3/94	10/3/94
Date Analyzed (EPA Method 7470)			9/22/94	9/29/94	9/22/94	9/26/94	9/26/94
Date Analyzed (EPA Method 7740)			10/5/94	10/6/94	10/5/94	10/5/94	10/5/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Review / Date:

 2/17/95

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

TCLP Metals Page 1 of 3
 RUSH

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			50	51	52	53	54
Collector's Sample #			BC-2A (1-2)	BC-3 (1-2)	BC-4 (1-2)	BC-5 (1-2)	BC-6 (1-2)
Date Sampled			9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Leached			9/21/94	9/21/94	9/21/94	9/21/94	9/21/94
Date Analyzed (EPA Method 7060)			9/24/94	9/24/94	9/24/94	9/24/94	9/24/94
Date Analyzed (EPA Method 6010)			9/23/94	9/23/94	9/23/94	9/23/94	9/24/94
Date Analyzed (EPA Method 7131)			9/24/94	9/24/94	9/24/94	9/24/94	9/28/94
Date Analyzed (EPA Method 7421)			9/26/94	9/26/94	9/26/94	9/26/94	9/28/94
Date Analyzed (EPA Method 7470)			9/22/94	9/22/94	9/22/94	9/22/94	9/22/94
Date Analyzed (EPA Method 7740)			9/26/94	9/26/94	9/26/94	9/26/94	9/26/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	<0.005	<0.005	<0.005	<0.005	0.067
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0098
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

TCLP Metals Page 2 of 3
 RUSH

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			55	56	57	58	59
Collector's Sample #			BC-7 (1-2)	BC-8 (1-2)	BC-9 (1-2)	BC-10 (1-2)	BC-11 (1-2)
Date Sampled			9/17/94	9/17/94	9/17/94	9/17/94	9/17/94
Date Leached			9/21/94	9/21/94	9/21/94	9/21/94	9/21/94
Date Analyzed (EPA Method 7060)			9/24/94	9/24/94	9/24/94	9/24/94	9/24/94
Date Analyzed (EPA Method 6010)			9/24/94	9/23/94	9/23/94	9/23/94	9/23/94
Date Analyzed (EPA Method 7131)			9/26/94	9/23/94	9/24/94	9/24/94	9/26/94
Date Analyzed (EPA Method 7421)			9/23/94	9/23/94	9/23/94	9/23/94	9/23/94
Date Analyzed (EPA Method 7470)			9/22/94	9/22/94	9/22/94	9/22/94	9/22/94
Date Analyzed (EPA Method 7740)			9/26/94	9/24/94	9/24/94	9/26/94	9/24/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L				
Arsenic	7060	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2	<2	<2
Cadmium	7131	0.005	0.0869	0.1	0.04	0.015	0.19
Chromium	6010	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7421	0.0075	0.0528	0.282	0.0572	<0.0075	0.070
Mercury	7470	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Silver	6010	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

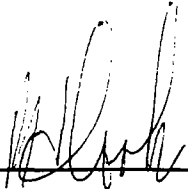
TCLP Metals Page 3 of 3
RUSH

ANALYTICAL RESULTS

Metals in TCLP Leachate

Work Order #			60	69	70
Collector's Sample #			BC-12 (1-2)	BC-D1	BC-D2
Date Sampled			9/17/94	9/17/94	9/17/94
Date Leached			9/21/94	9/21/94	9/21/94
Date Analyzed (EPA Method 7060)			9/24/94	9/24/94	9/24/94
Date Analyzed (EPA Method 6010)			9/23/94	9/23/94	9/23/94
Date Analyzed (EPA Method 7131)			9/24/94	9/24/94	9/26/94
Date Analyzed (EPA Method 7421)			9/23/94	9/23/94	9/26/94
Date Analyzed (EPA Method 7470)			9/22/94	9/22/94	9/22/94
Date Analyzed (EPA Method 7740)			9/26/94	9/26/94	9/24/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L		
Arsenic	7060	0.05	<0.05	<0.05	<0.05
Barium	6010	2	<2	<2	<2
Cadmium	7131	0.005	<0.005	0.014	0.029
Chromium	6010	0.1	<0.1	<0.1	0.3675
Lead	7421	0.0075	<0.0075	0.139	1.06
Mercury	7470	0.002	<0.002	<0.002	<0.002
Selenium	7740	0.05	<0.05	<0.05	<0.05
Silver	6010	0.05	<0.05	<0.05	<0.05

Analytical Review / Date:

 2/17/95

APPENDIX F-2

SOIL QA/QC DATA REPORTS

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Volatiles QC

Page 1 of 8

SURROGATE RECOVERY SUMMARY

Volatile Organics in Soil

EPA Method 8240

Work Order #	Collector's Sample #	Percent Recovery			
		S1 (TOL)	S2 (BFB)	S3 (DCE)	TOTAL OUT
02	BC-2	104	96	111	0
03	EF-1 (1-3)	106	422	146	2
04	EF-1 (18-20)	93	111	119	0
05	EF-2 (1-3)	94	112	118	0
06	EF-2 (18-20)	92	110	116	0
07	EF-3 (1-3)	99	116	142	1
08	EF-3 (18-20)	92	115	159	1
09	EF-4 (1-3)	98	112	138	1
10	EF-4 (18-20)	99	117	123	1
11	D-2 (1-3)	100	93	97	0
12	D-2 (18-20)	107	89	110	0
13	FF-1 (1-3)	114	83	107	0
14	FF-1 (18-20)	138	107	138	2
15	FF-2 (1-3)	118	81	134	2
16	FF-2 (18-20)	127	77	123	2
17	FF-3 (1-3)	104	99	137	1
18	FF-3 (18-20)	109	113	142	1
19	10-1 (1-3)	736	52	110	2
20	10-1 (18-20)	5476	602	113	2

Surrogates

S1	TOL	Toluene-d8
S2	BFB	Bromofluorobenzene
S3	DCE	1,2-Dichloroethane-d4

Recovery Limits

81 - 117
74 - 121
70 - 121

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles QC

Page 2 of 8

SURROGATE RECOVERY SUMMARY

Volatile Organics in Soil

EPA Method 8240

Work Order #	Collector's Sample #	Percent Recovery			
		S1 (TOL)	S2 (BFB)	S3 (DCE)	TOTAL OUT
21	CD-1 (1-3)	1633	180	103	2
22	10-2 (1-3)	1838	406	130	3
23	10-2 (18-20)	2220	66	102	2
24	W-5 (1-3)	1409	92	103	1
25	W-5 (18-20)	0	0	114	2
26	W-1 (1-3)	98	102	136	1
27	W-1 (18-20)	101	108	136	1
28	CD-2 (1-3)	108	91	184	1
29	CD-3 (1-3)	112	108	158	1
30	6-1 (1-3)	20	*	80	2
31	6-1 (18-20)	106	91	106	0
32	5-1 (1-3)	105	96	106	0
33	5-1 (18-20)	0	0	117	2
34	5-2 (1-3)	3482	277	102	2
35	5-2 (18-20)	1313	146	103	2
36	W-4 (1-3)	103	95	105	0
37	W-4 (18-20)	109	75	110	0
38	W-6 (1-3)	932	*	108	2
39	W-6 (18-20)	108	92	102	0
40	D-1 (1-3)	105	98	98	0

* Surrogate not recovered due to matrix interference.

Surrogates

Recovery Limits

S1 TOL Toluene-d8
 S2 BFB Bromofluorobenzene
 S3 DCE 1,2-Dichloroethane-d4

81 - 117
 74 - 121
 70 - 121

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles QC

Page 3 of 8

SURROGATE RECOVERY SUMMARY

Volatile Organics in Soil

EPA Method 8240

Work Order #	Collector's Sample #	Percent Recovery			
		S1 (TOL)	S2 (BFB)	S3 (DCE)	TOTAL OUT
41	D-1 (18-20)	107	93	100	0
42	D-3 (4-6)	104	96	104	0
43	D-3 (18-20)	107	94	99	0
44	W-7 (3.5-5.5)	105	96	99	0
45	W-7 (18-20)	107	94	102	0
46	W-3 (4-6)	112	84	103	0
47	W-3 (18-20)	107	92	105	0
48	W-2 (4-6)	107	93	110	0
49	W-2 (18-20)	107	94	102	0
50	BC-2A (1-2)	97	165	89	1
51	BC-3 (1-2)	117	135	103	1
52	BC-4 (1-2)	106	143	104	1
53	BC-5 (1-2)	103	146	114	1
54	BC-6 (1-2)	104	152	106	1
55	BC-7 (1-2)	108	146	106	1
56	BC-8 (1-2)	103	154	107	1
57	BC-9 (1-2)	105	148	111	1
58	BC-10 (1-2)	101	152	109	1
59	BC-11 (1-2)	93	109	81	0
60	BC-12 (1-2)	103	105	109	0

Surrogates

Recovery Limits

S1	TOL	Toluene-d8
S2	BFB	Bromofluorobenzene
S3	DCE	1,2-Dichloroethane-d4

81 - 117
74 - 121
70 - 121

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Volatiles QC

Page 4 of 8

SURROGATE RECOVERY SUMMARY

Volatile Organics in Soil

EPA Method 8240

Work Order #	Collector's Sample #	Percent Recovery			
		S1 (TOL)	S2 (BFB)	S3 (DCE)	TOTAL OUT
61	5-3 (4-6)	107	92	105	0
62	5-3 (18-20)	103	103	107	0
63	PB-1 (0.5-2.5)	73	118	124	2
64	PB-2 (0.5-2.5)	107	96	104	0
65	CD-4 (18-20)	108	95	104	0
66	CD-5 (4-6)	109	97	109	0
69	BC-D1	92	111	125	1
70	BC-D2	122	75	148	2

Surrogates

S1	TOL	Toluene-d8
S2	BFB	Bromofluorobenzene
S3	DCE	1,2-Dichloroethane-d4

Recovery Limits

81 - 117
74 - 121
70 - 121

EPA Method 8240

[illegible]

Page 6 of 8

EPA Method 8240

[illegible]

Project ID #: 32-02
 Project ID Name: Dolton, IL
 Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles QC

Page 7 of 8

**MATRIX SPIKE (MS) &
 MATRIX SPIKE DUPLICATE (MSD) SUMMARY
 PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)**

Volatile Organics in Soil

EPA Method 8240

Work Order #: E94-063-37

Collector's Sample #: W-4 (18-20)

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %	Acceptability Limits %	
								RPD	% Recovery
Benzene	50	<0.025	56	54.5	112	109	3	20	76 - 127
Chlorobenzene	50	<0.025	53.1	52.4	106	105	1	20	75 - 110
1,1-Dichloroethylene	50	<0.025	55.2	55.3	110	111	0	20	61 - 145
Toluene	50	0.028	63.8	67.8	128	136	6	20	76 - 125
Trichloroethylene	50	<0.025	54.8	52.9	110	106	4	20	71 - 120

Work Order #: E94-063-50

Collector's Sample #: BC-2A (1-2)

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %	Acceptability Limits %	
								RPD	% Recovery
Benzene	50	<0.005	55.7	56.8	111	114	2	20	76 - 127
Chlorobenzene	50	<0.005	50.8	52.2	102	104	3	20	75 - 110
1,1-Dichloroethylene	50	<0.005	54.4	56.1	109	112	3	20	61 - 145
Toluene	50	<0.005	60.1	64.8	120	130	8	20	76 - 125
Trichloroethylene	50	<0.005	54.4	59.5	109	119	9	20	71 - 120

Project ID #: 32-02
Project ID Name: Dolton, IL
K Lab Project #: 94-063
Date Reported: 2/17/95

Volatiles QC

Page 8 of 8

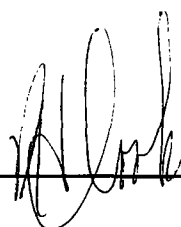
**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Volatile Organics in Soil
EPA Method 8240

Work Order #: E94-063-63

Collector's Sample #: PB-1 (.5-2.5)

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %	Acceptability Limits %	
								RPD	% Recovery
Benzene	50	<0.025	48	54.1	96	108	12	20	76 - 127
Chlorobenzene	50	<0.025	47.9	54.8	96	110	13	20	75 - 110
1,1-Dichloroethylene	50	<0.025	60.7	78.6	121	157	26	20	61 - 145
Toluene	50	<0.025	50.4	56.1	101	112	11	20	76 - 125
Trichloroethylene	50	<0.025	45.2	50.2	90	100	10	20	71 - 120

Review / Date:

 2/17/95

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

SURROGATE RECOVERY SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

4-Methylphenol

Work Order #	Collector's Sample #	Percent Recovery					
		S1 (PHL)	S2 (2FP)	S3 (NBD5)	S4(2FBP)	S5(246TBP)	TOTAL OUT
02	BC-2	66	78	83	94	90	0
03	EF-1 (1-3)	90	112	109	113	135	1
04	EF-1 (18-20)	99	121	120	122	135	2
05	EF-2 (1-3)	81	94	100	113	92	0
06	EF-2 (18-20)	83	100	99	106	87	0
07	EF-3 (1-3)	95	115	125	113	119	1
08	EF-3 (18-20)	97	113	119	119	78	1
09	EF-4 (1-3)	95	113	110	117	91	1
10	EF-4 (18-20)	94	113	113	115	86	0
11	D-2 (1-3)	88	106	104	110	105	0
12	D-2 (18-20)	74	90	84	85	73	0
13	FF-1 (1-3)	74	87	81	83	82	0
14	FF-1 (18-20)	97	112	116	127	109	1
15	FF-2 (1-3)	100	121	111	112	161	1
16	FF-2 (18-20)	82	97	96	118	127	2
17	FF-3 (1-3)	75	92	85	90	72	0
18	FF-3 (18-20)	84	99	102	109	81	0

Surrogates

S1	PHL	Phenol-d5
S2	2FP	2-Fluorophenol
S3	NBD5	Nitrobenzene-d5
S4	2FBP	2-Fluorobiphenyl
S5	246TBP	2,4,6-Tribromophenol

Recovery Limits

24 - 113
25 - 121
23 - 120
30 - 115
19 - 122

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

SURROGATE RECOVERY SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

4-Methylphenol

Work Order #	Collector's Sample #	Percent Recovery					
		S1 (PHL)	S2 (2FP)	S3 (NBD5)	S4(2FBP)	S5(246TBP)	TOTAL OUT
19	10-1 (1-3)	84	105	104	106	80	0
20	10-1 (18-20)	74	89	81	82	84	0
21	CD-1 (1-3)	65	70	100	110	100	0
22	10-2 (1-3)	59	70	79	81	72	0
23	10-2 (18-20)	68	83	80	80	68	0
24	W-5 (1-3)	68	73	92	99	97	0
25	W-5 (18-20)	53	60	75	74	47	0
26	W-1 (1-3)	48	56	66	71	55	0
27	W-1 (18-20)	43	45	64	83	88	0
28	CD-2 (1-3)	51	50	70	73	65	0
29	CD-3 (1-3)	58	67	79	76	68	0
30	6-1 (1-3)	59	71	102	100	92	0
31	6-1 (18-20)	69	85	100	110	113	0
32	5-1 (1-3)	70	86	98	108	132	1
33	5-1 (18-20)	72	84	108	107	53	0
34	5-2 (1-3)	83	100	85	92	106	0
35	5-2 (18-20)	35	30	40	55	40	0
36	W-4 (1-3)	84	96	88	93	44	0

Surrogates

S1	PHL	Phenol-d5
S2	2FP	2-Fluorophenol
S3	NBD5	Nitrobenzene-d5
S4	2FBP	2-Fluorobiphenyl
S5	246TBP	2,4,6-Tribromophenol

Recovery Limits

24 - 113
 25 - 121
 23 - 120
 30 - 115
 19 - 122

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

SURROGATE RECOVERY SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

4-Methylphenol

Work Order #	Collector's Sample #	Percent Recovery					TOTAL OUT
		S1 (PHL)	S2 (2FP)	S3 (NBD5)	S4(2FBP)	S5(246TBP)	
37	W-4 (18-20)	86	99	93	99	107	0
38	W-6 (1-3)	86	107	88	93	129	1
39	W-6 (18-20)	74	82	88	93	67	0
40	D-1 (1-3)	95	120	95	97	126	1
41	D-1 (18-20)	87	105	97	104	74	0
42	D-3 (4-6)	81	100	90	93	112	0
43	D-3 (18-20)	74	87	86	90	92	0
44	W-7 (3.5-5.5)	75	83	94	93	90	0
45	W-7 (18-20)	116	144	87	91	117	2
46	W-3 (4-6)	49	58	69	90	29	0
47	W-3 (18-20)	72	88	96	100	62	0
48	W-2 (4-6)	73	83	97	98	87	0
49	W-2 (18-20)	66	77	67	70	57	0
50	BC-2A (1-2)	74	90	93	97	84	0
51	BC-3 (1-2)	79	98	99	100	86	0
52	BC-4 (1-2)	62	66	74	83	82	0
53	BC-5 (1-2)	63	74	79	85	82	0
54	BC-6 (1-2)	109	24	19	22	30	3

Surrogates

S1	PHL	Phenol-d5
S2	2FP	2-Fluorophenol
S3	NBD5	Nitrobenzene-d5
S4	2FBP	2-Fluorobiphenyl
S5	246TBP	2,4,6-Tribromophenol

Recovery Limits

24 - 113
25 - 121
23 - 120
30 - 115
19 - 122

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

SURROGATE RECOVERY SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

4-Methylphenol

Work Order #	Collector's Sample #	Percent Recovery					
		S1 (PHL)	S2 (2FP)	S3 (NBD5)	S4(2FBP)	S5(246TBP)	TOTAL OUT
55	BC-7 (1-2)	79	90	92	94	91	0
56	BC-8 (1-2)	55	60	70	75	60	0
57	BC-9 (1-2)	75	90	100	115	95	0
58	BC-10 (1-2)	80	90	95	110	95	0
59	BC-11 (1-2)	75	80	95	110	95	0
60	BC-12 (1-2)	57	67	56	60	67	0
61	5-3 (4-6)	82	91	78	77	90	0
62	5-3 (18-20)	79	87	76	74	67	0
63	PB-1 (0.5-2.5)	99	123	101	104	115	1
64	PB-2 (0.5-2.5)	83	99	85	90	115	0
65	CD-4 (18-20)	96	114	109	92	132	1
66	CD-5 (4-6)	83	92	77	78	86	0
69	BC-D1	27	33	45	52	22	0
70	BC-D2	*	*	*	*	*	5

* Surrogates diluted due to matrix effect.

Surrogates			Recovery Limits
S1	PHL	Phenol-d5	24 - 113
S2	2FP	2-Fluorophenol	25 - 121
S3	NBD5	Nitrobenzene-d5	23 - 120
S4	2FBP	2-Fluorobiphenyl	30 - 115
S5	246TBP	2,4,6-Tribromophenol	19 - 122

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles QC

Page 5 of 22

METHOD BLANK SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

Lab Blank #	BLANKENV91594	BLANK91694	BLANK91794	BLK92094	BLANK92794
Date Analyzed	9/24/94	9/27/94	9/27/94	9/29/94	10/4/94
Analyte	Concentration mg/Kg				
Phenol	<0.66	<0.66	<0.66	<0.66	<0.66
2-Chlorophenol	<0.66	<0.66	<0.66	<0.66	<0.66
1,3-Dichlorobenzene	<0.66	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	<0.66	<0.66	<0.66	<0.66	<0.66
1,2-Dichlorobenzene	<0.66	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	<0.66	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	<0.66	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	<0.66	<0.66	<0.66	<0.66	<0.66
Isophorone	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	<0.74	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	<0.66	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	<0.66	<0.66	<0.66	<0.66	<0.66
Naphthalene	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	<0.66	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	<1.3	<1.3	<1.3	<1.3	<1.3
2-Methylnaphthalene	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorocyclopentadiene	<0.66	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	<0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles QC

Page 6 of 22

METHOD BLANK SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

Lab Blank #	BLANKENV91594	BLANK91694	BLANK91794	BLK92094	BLANK92794
Date Analyzed	9/24/94	9/27/94	9/27/94	9/29/94	10/4/94
Analyte	Concentration mg/Kg				
2,4,5-Trichlorophenol	<0.66	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	<0.66	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	<3.3	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	<0.66	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	<0.66	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	<3.3	<3.3	<3.3	<3.3	<3.3
Acenaphthene	<0.66	<0.66	<0.66	<0.66	<0.66
2,4-Dinitrophenol	<0.66	<0.66	<0.66	<0.66	<0.66
Dibenzofuran	<0.66	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	<3.3	<3.3	<3.3	<3.3	<3.3
2,4-Dinitrotoluene	<0.66	<0.66	<0.66	<0.66	<0.66
Diethylphthalate	<0.66	<0.66	<0.66	1.9	<0.66
4-Chlorophenyl-phenylether	<0.66	<0.66	<0.66	<0.66	<0.66
Fluorene	<0.66	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	<1.3	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	<0.66	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	<0.66	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	<3.3	<3.3	<3.3	<3.3	<3.3
Phenanthrene	<0.66	<0.66	<0.66	<0.66	<0.66
Anthracene	<0.66	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	5.5	<0.66	<0.66	<0.66	<0.66
Fluoranthene	<0.66	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles QC

Page 7 of 22

METHOD BLANK SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

Lab Blank #	BLANKENV91594	BLANK91694	BLANK91794	BLK92094	BLANK92794
Date Analyzed	9/24/94	9/27/94	9/27/94	9/29/94	10/4/94
Analyte	Concentration mg/Kg				
Pyrene	<0.66	<0.66	<0.66	<0.66	<0.66
Butylbenzylphthalate	<0.66	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	<1.3	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	<0.66	<0.66	<0.66	<0.66	<0.66
Chrysene	<0.66	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	<0.66	3.6	<0.66	<0.66	1.4
Di-n-octylphthalate	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	<0.66	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	<0.66	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	<0.66	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	<0.66	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	<0.85	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	<1.3	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles QC

Page 8 of 22

METHOD BLANK SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

Lab Blank #	SBLKE10913	BLANK0921
Date Analyzed	9/15/94	10/5/94
Analyte	Concentration mg/Kg	
Phenol	<0.66	<0.66
2-Chlorophenol	<0.66	<0.66
1,3-Dichlorobenzene	<0.66	<0.66
1,4-Dichlorobenzene	<0.66	<0.66
1,2-Dichlorobenzene	<0.66	<0.66
Benzyl Alcohol	<1.3	<1.3
2-Methylphenol	<0.66	<0.66
Hexachloroethane	<0.66	<0.66
4-Methylphenol	<0.66	<0.66
Nitrobenzene	<0.66	<0.66
2-Nitrophenol	<0.66	<0.66
Isophorone	<0.66	<0.66
2,4-Dimethylphenol	<0.74	<0.74
bis(2-Chloroethoxy)Methane	<0.66	<0.66
2,4-Dichlorophenol	<0.66	<0.66
1,2,4-Trichlorobenzene	<0.66	<0.66
Naphthalene	<0.66	<0.66
Hexachlorobutadiene	<0.66	<0.66
4-Chloro-3-Methylphenol	<1.3	<1.3
2-Methylnaphthalene	<0.66	<0.66
Hexachlorocyclopentadiene	<0.66	<0.66
2,4,6-Trichlorophenol	<0.66	<0.66

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 9 of 22

METHOD BLANK SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

Lab Blank #	SBLKE10913	BLANK0921
Date Analyzed	9/15/94	10/5/94
Analyte	Concentration mg/Kg	
2,4,5-Trichlorophenol	<0.66	<0.66
2-Chloronaphthalene	<0.66	<0.66
2-Nitroaniline	<3.3	<3.3
Dimethylphthalate	<0.66	<0.66
Acenaphthylene	<0.66	<0.66
4-Nitroaniline	<3.3	<3.3
Acenaphthene	<0.66	<0.66
2,4-Dinitrophenol	<.66	<.66
Dibenzofuran	<0.66	<0.66
4-Nitrophenol	<3.3	<3.3
2,4-Dinitrotoluene	<0.66	<0.66
Diethylphthalate	<0.66	<0.66
4-Chlorophenyl-phenylether	<0.66	<0.66
Fluorene	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	<1.3	<1.3
4-Bromophenyl-phenylether	<0.66	<0.66
Hexachlorobenzene	<0.66	<0.66
Pentachlorophenol	<3.3	<3.3
Phenanthrene	<0.66	<0.66
Anthracene	<0.66	<0.66
Di-n-butylphthalate	<0.66	<0.66
Fluoranthene	<0.66	<0.66

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 10 of 22

METHOD BLANK SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

Lab Blank #	SBLKE10913	BLANK0921
Date Analyzed	9/15/94	10/5/94
Analyte	Concentration mg/Kg	
Pyrene	<0.66	<0.66
Butylbenzylphthalate	<0.66	<0.66
3,3'-Dichlorobenzidine	<1.3	<1.3
Benzo(a)anthracene	<0.66	<0.66
Chrysene	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	<0.66	<0.66
Di-n-octylphthalate	<0.66	<0.66
Benzo(b)fluoranthene	<0.66	<0.66
Benzo(k)fluoranthene	<0.66	<0.66
Benzo(a)pyrene	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	<0.66	<0.66
Dibenz(a,h)anthracene	<0.66	<0.66
Benzo(g,h,i)perylene	<0.66	<0.66
2,6-Dinitrotoluene	<0.85	<0.85
4-Chloroaniline	<1.3	<1.3

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles QC

Page 11 of 22

BLANK SPIKE SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

Lab Blank #	BLKMS921	BLANKMS92094	BLKMS91794	SBLK0915MS
Date Analyzed	10/3/94	10/3/94	10/3/94	9/29/94
Analyte	Concentration mg/Kg			
Phenol	5.6	6.2	6.3	6.2
2-Chlorophenol	5.6	6.8	7.1	6.2
1,3-Dichlorobenzene	<0.66	<0.66	<0.66	<0.66
1,4-Dichlorobenzene	5.4	6.2	6.3	5.6
1,2-Dichlorobenzene	<0.66	<0.66	<0.66	<0.66
Benzyl Alcohol	<1.3	<1.3	<1.3	<1.3
2-Methylphenol	<0.66	<0.66	<0.66	<0.66
Hexachloroethane	<0.66	<0.66	<0.66	<0.66
4-Methylphenol	<0.66	<0.66	<0.66	<0.66
Nitrobenzene	<0.66	<0.66	<0.66	<0.66
2-Nitrophenol	<0.66	<0.66	<0.66	<0.66
Isophorone	<0.66	<0.66	<0.66	<0.66
2,4-Dimethylphenol	<0.74	<0.74	<0.74	<0.74
bis(2-Chloroethoxy)Methane	<0.66	<0.66	<0.66	<0.66
2,4-Dichlorophenol	<0.66	<0.66	<0.66	<0.66
1,2,4-Trichlorobenzene	5.30	6.50	6.60	5.60
Naphthalene	<0.66	<0.66	<0.66	<0.66
Hexachlorobutadiene	<0.66	<0.66	<0.66	<0.66
4-Chloro-3-Methylphenol	6.1	6.4	6.7	6.4
2-Methylnaphthalene	<0.66	<0.66	<0.66	<0.66
Hexachlorocyclopentadiene	<0.66	<0.66	<0.66	<0.66
2,4,6-Trichlorophenol	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles QC

Page 12 of 22

BLANK SPIKE SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

Lab Blank #	BLKMS921	BLANKMS92094	BLKMS91794	SBLK0915MS
Date Analyzed	10/3/94	10/3/94	10/3/94	9/29/94
Analyte	Concentration mg/Kg			
2,4,5-Trichlorophenol	<0.66	<0.66	<0.66	<0.66
2-Chloronaphthalene	<0.66	<0.66	<0.66	<0.66
2-Nitroaniline	<3.3	<3.3	<3.3	<3.3
Dimethylphthalate	<0.66	<0.66	<0.66	<0.66
Acenaphthylene	<0.66	<0.66	<0.66	<0.66
4-Nitroaniline	<3.3	<3.3	<3.3	<3.3
Acenaphthene	5.7	6	6.1	6
2,4-Dinitrophenol	<.66	<.66	<.66	<.66
Dibenzofuran	<0.66	<0.66	<0.66	<0.66
4-Nitrophenol	<3.3	4.5	5.1	5.1
2,4-Dinitrotoluene	6	9.7	8.9	5.8
Diethylphthalate	<0.66	<0.66	<0.66	<0.66
4-Chlorophenyl-phenylether	<0.66	<0.66	<0.66	<0.66
Fluorene	<0.66	<0.66	<0.66	<0.66
2-Methyl-4,6-Dinitrophenol	<1.3	<1.3	<1.3	<1.3
4-Bromophenyl-phenylether	<0.66	<0.66	<0.66	<0.66
Hexachlorobenzene	<0.66	<0.66	<0.66	<0.66
Pentachlorophenol	<3.3	<3.3	<3.3	<3.3
Phenanthrene	<0.66	<0.66	<0.66	<0.66
Anthracene	<0.66	<0.66	<0.66	<0.66
Di-n-butylphthalate	<0.66	<0.66	<0.66	<0.66
Fluoranthene	<0.66	<0.66	<0.66	<0.66

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 13 of 22

BLANK SPIKE SUMMARY

Semi-Volatile Organics in Soil

EPA Method 8270

Lab Blank #	BLKMS921	BLANKMS92094	BLKMS91794	SBLK0915MS
Date Analyzed	10/3/94	10/3/94	10/3/94	9/29/94
Analyte	Concentration mg/Kg			
Pyrene	6.4	6.2	6.4	7
Butylbenzylphthalate	<0.66	<0.66	<0.66	<0.66
3,3'-Dichlorobenzidine	<1.3	<1.3	<1.3	<1.3
Benzo(a)anthracene	<0.66	<0.66	<0.66	<0.66
Chrysene	<0.66	<0.66	<0.66	<0.66
bis(2-Ethylhexyl)phthalate	<.66	<.66	<.66	<.66
Di-n-octylphthalate	<0.66	<0.66	<0.66	<0.66
Benzo(b)fluoranthene	<0.66	<0.66	<0.66	<0.66
Benzo(k)fluoranthene	<0.66	<0.66	<0.66	<0.66
Benzo(a)pyrene	<0.66	<0.66	<0.66	<0.66
Indeno(1,2,3-cd)pyrene	<0.66	<0.66	<0.66	<0.66
Dibenz(a,h)anthracene	<0.66	<0.66	<0.66	<0.66
Benzo(g,h,i)perylene	<0.66	<0.66	<0.66	<0.66
2,6-Dinitrotoluene	<0.85	<0.85	<0.85	<0.85
4-Chloroaniline	<1.3	<1.3	<1.3	<1.3

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 14 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)

Semi-Volatile Organics in Soil

EPA Method 8270

Acceptability Limits %

Work Order #: E94-063-01

RPD: 20

Collector's Sample #: BC-1

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
1,2,4-Trichlorobenzene	80	<2.5	60	58	75	73	3
Acenaphthene	80	<4.5	73	66	91	83	10
2,4-Dinitrotoluene	80	<4.5	48	44	60	55	9
Pyrene	80	<4	84	71	105	89	17
N-nitroso-di-N-propylamine	80	<24	56	60	70	75	7
1,4-Dichlorobenzene	80	<4.5	58	56	73	70	4
Phenol	80	<9	67	65	84	81	3
2-Chlorophenol	80	<6.5	65	66	81	83	2
4-Chloro-3-Methylphenol	80	<1.3	82	73	103	91	12
4-Nitrophenol	80	<8	36	32	45	40	12
Pentachlorophenol	80	<6	34	30	43	38	13

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 15 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Semi-Volatile Organics in Soil**

EPA Method 8270

Acceptability Limits %

Work Order #: E94-063-11

RPD: 20

Collector's Sample #: D-2 (1-3)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
1,2,4-Trichlorobenzene	80	<0.25	60.9	62	76	78	1
Acenaphthene	80	<0.45	67.5	66.8	84	84	1
2,4-Dinitrotoluene	80	<0.45	66.1	61.2	83	77	8
Pyrene	80	<0.4	75.4	74.1	94	93	2
N-nitroso-di-N-propylamine	80	<2.4	60.1	58.1	75	73	3
1,4-Dichlorobenzene	80	<0.45	64.4	62.4	81	78	3
Phenol	80	1.8	59.1	59.8	72	73	1
2-Chlorophenol	80	<0.65	59.3	62.8	74	79	6
4-Chloro-3-Methylphenol	80	<0.9	66.5	67.6	83	85	2
4-Nitrophenol	80	<0.8	59	57.7	74	72	2
Pentachlorophenol	80	<0.6	58.6	54.9	73	69	7

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 16 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Semi-Volatile Organics in Soil

EPA Method 8270

Acceptability Limits %

Work Order #: E94-063-22

RPD: 20

Collector's Sample #: 10-2 (1-3)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
1,2,4-Trichlorobenzene	80	<0.25	41.5	43.3	52	54	4
Acenaphthene	80	<0.45	46.3	47.2	58	59	2
2,4-Dinitrotoluene	80	<0.45	47.2	47.2	59	59	0
Pyrene	80	<0.4	60.9	60	76	75	1
N-nitroso-di-N-propylamine	80	<2.4	55.2	57.7	69	72	4
1,4-Dichlorobenzene	80	<0.45	43.3	45.8	54	57	6
Phenol	80	2.8	46.2	47	54	55	2
2-Chlorophenol	80	<0.65	44.7	47.7	56	60	6
4-Chloro-3-Methylphenol	80	<0.9	55.2	57.4	69	72	4
4-Nitrophenol	80	<0.8	43.7	45.6	55	57	4
Pentachlorophenol	80	<0.6	35.6	38.1	45	48	7

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 17 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Semi-Volatile Organics in Soil

EPA Method 8270

Acceptability Limits %

Work Order #: E94-063-29

RPD: 20

Collector's Sample #: CD-3 (1-3)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
1,2,4-Trichlorobenzene	80	<0.25	46.6	68.6	58	86	37
Acenaphthene	80	<0.45	45.9	71.8	57	90	44
2,4-Dinitrotoluene	80	<0.45	16.6	16.1	21	20	3
Pyrene	80	<0.4	59.1	80.4	74	101	31
N-nitroso-di-N-propylamine	80	<2.4	48.1	67.1	60	84	33
1,4-Dichlorobenzene	80	<0.45	46.8	67.8	59	85	37
Phenol	80	<0.66	49.5	72.6	62	91	38
2-Chlorophenol	80	<0.65	46.7	67.2	58	84	36
4-Chloro-3-Methylphenol	80	<0.9	58.2	84.6	73	106	37
4-Nitrophenol	80	<0.8	28	38.6	35	48	32
Pentachlorophenol	80	<0.6	56.6	83.4	71	104	38

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 18 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Semi-Volatile Organics in Soil**

EPA Method 8270

Acceptability Limits %

Work Order #: E94-063-34

RPD: 20

Collector's Sample #: 5-2 (1-3)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
1,2,4-Trichlorobenzene	80	<0.25	74.1	68.3	93	85	9
Acenaphthene	80	<0.45	80.1	73.8	100	92	8
2,4-Dinitrotoluene	80	<0.45	81.1	75.5	101	94	7
Pyrene	80	<0.4	88.7	83.6	111	105	6
N-nitroso-di-N-propylamine	80	<2.4	83.4	80.4	104	101	4
1,4-Dichlorobenzene	80	<0.45	76.8	72	96	90	6
Phenol	80	1.8	87.6	88.5	107	108	1
2-Chlorophenol	80	<0.65	73.8	69.7	92	87	6
4-Chloro-3-Methylphenol	80	<0.9	83.9	81.6	105	102	3
4-Nitrophenol	80	<0.8	70.4	64.9	88	81	8
Pentachlorophenol	80	<0.6	61.8	58.2	77	73	6

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 19 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Semi-Volatile Organics in Soil

EPA Method 8270

Acceptability Limits %

Work Order #: E94-063-51

RPD: 20

Collector's Sample #: BC-3 (1-2)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
1,2,4-Trichlorobenzene	80	<0.25	49.7	49.9	62	62	1
Acenaphthene	80	<0.45	58.9	53.6	74	67	9
2,4-Dinitrotoluene	80	<0.45	58.7	49.4	73	62	17
Pyrene	80	<0.4	70.9	60	89	75	17
N-nitroso-di-N-propylamine	80	<2.4	64.5	63.1	81	79	2
1,4-Dichlorobenzene	80	<0.45	49.2	51.5	62	64	5
Phenol	80	<0.66	55	54	69	68	2
2-Chlorophenol	80	<0.65	53.2	53.7	67	67	1
4-Chloro-3-Methylphenol	80	<0.9	71.6	64	90	80	11
4-Nitrophenol	80	<0.8	54.4	45.8	68	57	17
Pentachlorophenol	80	<0.6	39.6	31.6	50	40	22

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 20 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Semi-Volatile Organics in Soil

EPA Method 8270

Acceptability Limits %

Work Order #: E94-063-54

RPD: 20

Collector's Sample #: BC-6 (1-2)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
1,2,4-Trichlorobenzene	80	<1.25	65	73	81	91	11
Acenaphthene	80	<2.25	69.5	76.5	87	96	10
2,4-Dinitrotoluene	80	<2.25	56	62.5	70	78	11
Pyrene	80	<2	76.5	86.5	96	108	12
N-nitroso-di-N-propylamine	80	<12	72	86	90	108	18
1,4-Dichlorobenzene	80	<2.25	73	82.5	91	103	12
Phenol	80	<4.5	84	93.5	105	117	11
2-Chlorophenol	80	<3.25	78	88	98	110	12
4-Chloro-3-Methylphenol	80	<4.5	85.5	96	107	120	12
4-Nitrophenol	80	<4	55.5	62	69	78	11
Pentachlorophenol	80	<3.3	46	50	58	63	8

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 21 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Semi-Volatile Organics in Soil**

EPA Method 8270

Acceptability Limits %

Work Order #: E94-063-60

RPD: 20

Collector's Sample #: BC-12 (1-2)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
1,2,4-Trichlorobenzene	80	<0.25	56.2	53.6	70	67	6
Acenaphthene	80	<0.45	52.7	50	66	63	5
2,4-Dinitrotoluene	80	<0.45	16	15.3	20	19	4
Pyrene	80	<0.4	53	51.8	66	65	2
N-nitroso-di-N-propylamine	80	<2.4	72.4	66.5	91	83	8
1,4-Dichlorobenzene	80	<0.45	52	49.5	65	62	5
Phenol	80	<0.66	56	50.7	70	63	10
2-Chlorophenol	80	<0.65	58.1	54.5	73	68	6
4-Chloro-3-Methylphenol	80	<0.9	61	55.1	76	69	10
4-Nitrophenol	80	<0.8	29.2	26.6	37	33	9
Pentachlorophenol	80	<0.6	55.8	52.1	70	65	7

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 22 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Semi-Volatile Organics in Soil

EPA Method 8270

Acceptability Limits %

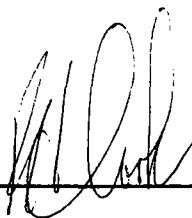
Work Order #: E94-063-63

RPD: 20

Collector's Sample #: PB-1 (.5-2.5)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
1,2,4-Trichlorobenzene	80	<0.25	64.9	60.3	81	75	8
Acenaphthene	80	<0.45	71.6	64.7	90	81	10
2,4-Dinitrotoluene	80	<0.45	71	63.6	89	80	11
Pyrene	80	<0.4	81.8	78.2	102	98	5
N-nitroso-di-N-propylamine	80	<2.4	77.9	69.4	97	87	12
1,4-Dichlorobenzene	80	<0.45	67.3	60.6	84	76	10
Phenol	80	<0.66	69.1	62.5	86	78	10
2-Chlorophenol	80	<0.65	68.4	63	86	79	8
4-Chloro-3-Methylphenol	80	<0.9	75.5	71.7	94	90	5
4-Nitrophenol	80	<0.8	67.4	62.7	84	78	7
Pentachlorophenol	80	<0.6	56.6	54	71	68	5

Review / Date:

 2/17/95

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Metals ICAP QC
 Page 1 of 22

INITIAL CALIBRATION VERIFICATION QC CHECK SAMPLE REPORT

Metals in TCLP Leachate

% Acceptability Limits: 90 - 110

Analyte	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/20/94	5	5.042	101
Chromium	9/20/94	5	5.017	100
Silver	9/20/94	0.5	0.505	101
Analyte	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/23/94	5	4.973	99
Chromium	9/23/94	5	4.976	100
Silver	9/23/94	0.5	0.4993	100
Analyte	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/24/94	5	4.958	99
Chromium	9/24/94	5	5.002	100
Silver	9/24/94	0.5	0.5017	100
Analyte	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/27/94	5	4.985	100
Chromium	9/27/94	5	4.988	100
Silver	9/27/94	0.5	0.4998	100
Analyte	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/29/94	5	4.917	98
Chromium	9/29/94	5	4.855	97
Silver	9/29/94	0.5	0.4909	98
Analyte	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	10/6/94	5	4.989	100
Chromium	10/6/94	5	5.036	101
Silver	10/6/94	0.5	0.5027	101
Analyte	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	10/10/94	5	4.926	99
Chromium	10/10/94	5	4.919	98
Silver	10/10/94	0.5	0.4948	99

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals ICAP QC

Page 2 of 22

METHOD BLANK SUMMARY

Metals in TCLP Leachate

Lab Blank #:	919ADB3010	919BDB3010	922ADB3010	922BDB3010
Date Digested:	9/19/94	9/19/94	9/22/94	9/22/94
Date Analyzed:	9/20/94	9/20/94	9/23/94	9/23/94
Analyte	Concentration mg/L			
Barium	<0.02	<0.02	<0.02	<0.02
Chromium	<0.04	<0.04	<0.04	<0.04
Silver	<0.03	<0.03	<0.03	<0.03

Lab Blank #:	923ADB3010	923ADB3010	928ADB3010	105ADB3010
Date Digested:	9/23/94	9/23/94	9/28/94	10/5/94
Date Analyzed:	9/24/94	9/27/94	9/29/94	10/10/94
Analyte	Concentration mg/L			
Barium	<0.02	<0.02	<0.02	<0.02
Chromium	<0.04	<0.04	<0.04	<0.04
Silver	<0.03	<0.03	<0.03	<0.03

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Metals Method 7470 QC

Page 3 of 22

INITIAL CALIBRATION VERIFICATION QC CHECK SAMPLE REPORT Metals in TCLP Leachate

% Acceptability Limits: 90 - 110

Analyte	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Mercury	9/16/94	2.5	2.56	102
	9/20/94	2.5	2.53	101
	9/23/94	2.5	2.54	102
	9/26/94	2.5	2.4	96
	9/29/94	2.5	2.55	102
	10/3/94	2.5	2.59	104

METHOD BLANK SUMMARY Metals in TCLP Leachate

Lab Blank #:	PBlank1	PBlank1	PBlank1
Date Digested:	9/16/94	9/20/94	9/22/94
Date Analyzed:	9/16/94	9/20/94	9/22/94
Analyte	Concentration µg/L		
Mercury	<0.2	<0.2	<0.2

Lab Blank #:	PBlank1	PBlank1	PBlank1
Date Digested:	9/26/94	9/29/94	10/3/94
Date Analyzed:	9/26/94	9/29/94	10/3/94
Analyte	Concentration µg/L		
Mercury	<0.2	<0.2	<0.2

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals GFAA QC

Page 4 of 22

**INITIAL CALIBRATION VERIFICATION
QC CHECK SAMPLE REPORT**
Metals in TCLP Leachate

% Acceptability Limits: 90 - 110

Analyte	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Arsenic	9/19/94	50	50.8	102
	9/23/94	50	50.2	100
	9/24/94	50	49.7	99
	9/29/94	50	45.2	90
	10/1/94	50	49.1	98
	10/4/94	50	50.1	100
	10/5/94	50	49.2	98
	10/7/94	50	50.7	101
Cadmium	9/19/94	5	4.81	96
	9/23/94	5	4.63	93
	9/26/94	5	4.57	91
	9/27/94	5	4.81	96
	9/27/94	5	4.88	98
	9/28/94	5	4.9	98
	9/28/94	5	4.67	93
	9/30/94	5	5.04	101
	10/5/94	5	4.96	99
	10/5/94	5	4.81	96
	10/6/94	5	4.89	98

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals GFAA QC

Page 5 of 22

INITIAL CALIBRATION VERIFICATION
QC CHECK SAMPLE REPORT
Metals in TCLP Leachate

% Acceptability Limits: 90 - 110

Analyte	Date Analyzed	Expected Result ppb	Observed Result ppb	% Recovery
Lead	9/19/94	10	10.4	104
	9/23/94	10	10.3	103
	9/23/94	10	9.7	97
	9/26/94	10	10.3	103
	9/27/94	50	48	96
	9/27/94	50	49.1	98
	9/27/94	50	50.5	101
	9/28/94	50	48.4	97
	9/29/94	50	53.4	107
	10/3/94	50	50.4	101
	10/5/94	50	48.5	97
	10/5/94	50	48.4	97
	10/6/94	50	48.6	97
	10/6/94	50	48.9	98
	10/7/94	50	47.4	95
	10/7/94	50	46.9	94

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals GFAA QC

Page 6 of 22

INITIAL CALIBRATION VERIFICATION
QC CHECK SAMPLE REPORT
Metals in TCLP Leachate

% Acceptability Limits: 90 - 110

Analyte	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Selenium	9/21/94	50	54.1	108
	9/24/94	50	49.8	100
	9/26/94	50	50.3	101
	9/26/94	50	50.2	100
	9/28/94	50	53.5	107
	10/4/94	50	50.6	101
	10/5/94	50	50.8	102
	10/6/94	50	52.7	105
	10/6/94	50	54.8	110
	10/7/94	50	50.2	100
	10/8/94	50	50.2	100

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Metals GFAA QC
 Page 7 of 22

METHOD BLANK SUMMARY

Metals in TCLP Leachate

Lab Blank #:	DB0916		DB0920		DB0923-1		DB0923-2	
Date Digested:	9/16/94		9/20/94		9/23/94		9/23/94	
Analyte	Date Analyzed	Conc. µg/L	Date Analyzed	Conc. µg/L	Date Analyzed	Conc. µg/L	Date Analyzed	Conc. µg/L
Arsenic	9/19/94	<12.5	9/23/94	<12.5	9/24/94	<12.5	9/24/94	<12.5
Cadmium	9/19/94	<0.4	9/27/94	<0.4	*	*	*	*
Lead	9/19/94	<3.08	9/23/94	<3.08	9/23/94	<3.08	9/23/94	<3.08
Selenium	9/21/94	<9.03	9/28/94	<9.03	9/24/94	<9.03	9/24/94	<9.03

Lab Blank #:	DB0927		DB1005		DB1007	
Date Digested:	9/27/94		10/5/94		10/7/94	
Analyte	Date Analyzed	Conc. µg/L	Date Analyzed	Conc. µg/L	Date Analyzed	Conc. µg/L
Arsenic	-	-	10/6/94	<12.5	-	-
Cadmium	9/28/94	<0.4	10/6/94	<0.4	-	-
Lead	9/28/94	<3.08	10/6/94	<3.08	-	-
Selenium	-	-	10/6/94	<9.03	10/8/94	<9.03

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals ICAP QC

Page 8 of 22

LABORATORY CONTROL SAMPLE RESULTS
Metals in TCLP Leachate

% Acceptability Limits: 80 - 120

Lab Control Sample ID#: LCS1919

Analyte	Date Digested	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/19/94	9/20/94	2	1.941	97
Chromium	9/19/94	9/20/94	0.1	0.0928	93
Silver	9/19/94	9/20/94	0.05	0.0445	89

Lab Control Sample ID#: LCS1919

Analyte	Date Digested	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/19/94	9/20/94	2	1.899	95
Chromium	9/19/94	9/20/94	0.1	0.0924	92
Silver	9/19/94	9/20/94	0.05	0.0459	92

Lab Control Sample ID#: LCS1922

Analyte	Date Digested	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/22/94	9/23/94	2	1.89	95
Chromium	9/22/94	9/23/94	0.1	0.0908	91
Silver	9/22/94	9/23/94	0.05	0.0463	93

Lab Control Sample ID#: LCS1922

Analyte	Date Digested	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/22/94	9/23/94	2	1.915	96
Chromium	9/22/94	9/23/94	0.1	0.0934	93
Silver	9/22/94	9/23/94	0.05	0.0479	96

Project ID #: Dolton, IL
Project ID Name: 94-063
SK Lab Project #: 34747.4
Date Reported: 2/17/95

Metals ICAP QC
Page 9 of 22

LABORATORY CONTROL SAMPLE RESULTS
Metals in TCLP Leachate

% Acceptability Limits: 80 - 120

Lab Control Sample ID#: LCS1923

Analyte	Date Digested	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/23/94	9/24/94	2	1.831	92
Chromium	9/23/94	9/24/94	0.1	0.0936	94
Silver	9/23/94	9/24/94	0.05	0.0491	98

Lab Control Sample ID#: LCS1923

Analyte	Date Digested	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/23/94	9/27/94	2	1.809	90
Chromium	9/23/94	9/27/94	0.1	0.0872	87
Silver	9/23/94	9/27/94	0.05	0.0463	93

Lab Control Sample ID#: LCS1928

Analyte	Date Digested	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/28/94	9/29/94	2	1.902	95
Chromium	9/28/94	9/29/94	0.1	0.0929	93
Silver	9/28/94	9/29/94	0.05	0.048	96

Lab Control Sample ID#: LCS1105

Analyte	Date Digested	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	10/5/94	10/10/94	2	1.898	95
Chromium	10/5/94	10/10/94	0.1	0.0951	95
Silver	10/5/94	10/10/94	0.05	0.0483	97

Project ID #: Dolton, IL
Project ID Name: 94-063
SK Lab Project #: 34747.4
Date Reported: 2/17/95

Metals GFAA QC

Page 10 of 22

LABORATORY CONTROL SAMPLE RESULTS

Metals in TCLP Leachate

% Acceptability Limits: 80 - 120

Lab Control Sample ID#: LCSE916

Analyte	Date Digested	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Arsenic	9/16/94	9/19/94	50	49.9	100
Cadmium	9/16/94	9/19/94	5	4.71	94
Lead	9/16/94	9/19/94	10	9.5	95
Selenium	9/16/94	9/21/94	50	53.2	106

Lab Control Sample ID#: LCSA1-923

Analyte	Date Digested	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Arsenic	9/23/94	9/24/94	50	50.2	100
Cadmium	9/23/94	9/23/94	5	4.22	84
Lead	9/23/94	9/23/94	10	9.9	99
Selenium	9/23/94	9/26/94	50	48.6	97

Lab Control Sample ID#: LCSA2-923

Analyte	Date Digested	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Arsenic	9/23/94	9/24/94	50	48.4	97
Cadmium	9/23/94	9/23/94	5	4.54	91
Lead	9/23/94	9/23/94	10	8.5	85
Selenium	9/23/94	9/26/94	50	46.8	94

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals GFAA QC
Page 11 of 22

LABORATORY CONTROL SAMPLE RESULTS

Metals in TCLP Leachate

% Acceptability Limits: 80 - 120

Lab Control Sample ID#: LCSA1-920

Analyte	Date Digested	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Arsenic	9/20/94	9/23/94	50	47.3	95
Cadmium	9/20/94	9/27/94	5	4.62	92
Lead	9/20/94	9/23/94	10	9.8	98
Selenium	9/20/94	9/28/94	50	43.2	86

Lab Control Sample ID#: LCSA2-920

Analyte	Date Digested	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Arsenic	9/20/94	9/29/94	50	47.1	94
Lead	9/20/94	9/27/94	10	9.1	91
Cadmium	9/20/94	9/27/94	5	4.1	82
Selenium	9/20/94	9/28/94	50	46.2	92

Lab Control Sample ID#: LCSA1-927

Analyte	Date Digested	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Cadmium	9/27/94	9/27/94	5	4.94	99
Lead	9/27/94	9/27/94	10	12.4	124

Lab Control Sample ID#: LCSA2-927

Analyte	Date Digested	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Cadmium	9/27/94	9/28/94	5	4.62	92
Lead	9/27/94	9/28/94	10	12.3	123

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals GFAA QC

Page 12 of 22

LABORATORY CONTROL SAMPLE RESULTS

Metals in TCLP Leachate

% Acceptability Limits: 80 - 120

Lab Control Sample ID#: LCSA105

Analyte	Date Digested	Date Analyzed	Expected Result µg/l	Observed Result µg/l	% Recovery
Arsenic	10/5/94	10/7/94	50	48.3	97
Cadmium	10/5/94	10/6/94	5	4.42	88
Lead	10/5/94	10/6/94	10	9.6	96
Selenium	10/5/94	10/6/94	50	52.4	105

Lab Control Sample ID#: LCSA107

Analyte	Date Digested	Date Analyzed	Expected Result µg/l	Observed Result µg/l	% Recovery
Selenium	10/7/94	10/8/94	50	49.6	99

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Metals ICAP QC

Page 13 of 22

**MATRIX SPIKE (MS) &
 MATRIX SPIKE DUPLICATE (MSD) SUMMARY
 PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
 Metals in TCLP Leachate**

Acceptability Limits %

Work Order #: E94-063-07

RPD: 20

Collector's Sample #: EF-3 (1-3)

% Recovery: 80 - 120

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.2895	1.987	1.998	85	85	1
Chromium	0.1	<0.04	0.0865	0.0862	87	86	0
Silver	0.05	<0.03	0.0356	0.0358	71*	72*	1

Work Order #: E94-063-14

Collector's Sample #: FF-1 (18-20)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.834	2.585	2.6	88	88	1
Chromium	0.1	<0.04	0.087	0.0855	87	86	2
Silver	0.05	<0.03	0.0308	0.0313	62*	63*	2

Work Order #: E94-063-15

Collector's Sample #: FF-2 (1-3)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.6565	2.377	2.409	86	88	2
Chromium	0.1	<0.04	0.0887	0.091	89	91	3
Silver	0.05	<0.03	0.0375	0.0399	75*	80	6

Work Order #: E94-063-24

Collector's Sample #: W-5 (1-3)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.6096	2.26	2.27	83	83	1
Chromium	0.1	<0.04	0.0852	0.0927	85	93	8
Silver	0.05	<0.03	0.0361	0.0368	72*	74*	2

* Low Silver recovery confirmed by redigestion.

Project ID #: Dolton, IL
 Project ID Name: 94-063
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Metals ICAP QC

Page 14 of 22

**MATRIX SPIKE (MS) &
 MATRIX SPIKE DUPLICATE (MSD) SUMMARY
 PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
 Metals in TCLP Leachate**

Acceptability Limits %

Work Order #: E94-063-05

RPD: 20

Collector's Sample #: EF-2 (1-3)

% Recovery: 80 - 120

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.5686	2.307	2.303	87	87	0
Chromium	0.1	<0.04	0.0838	0.0848	84	85	1
Silver	0.05	<0.03	0.0303	0.0317	61*	63*	1

Work Order #: E94-063-17

Collector's Sample #: FF-3 (1-3)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.5501	2.328	2.314	89	88	1
Chromium	0.1	0.04	0.1252	0.1238	85	84	2
Silver	0.05	<0.03	0.0346	0.0343	69*	69*	2

Work Order #: E94-063-31

Collector's Sample #: 6-1 (18-20)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.6167	2.422	2.425	90	90	0
Chromium	0.1	<0.04	0.0896	0.0913	90	91	2
Silver	0.05	<0.03	0.0353	0.0349	71*	70*	6

Work Order #: E94-063-40

Collector's Sample #: D-1 (1-3)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.5293	2.2	2.223	84	85	1
Chromium	0.1	<0.04	0.0877	0.0864	88	86	1
Silver	0.05	<0.03	0.0383	0.0354	77*	71*	2

* Low Silver recovery confirmed by redigestion.

Project ID #: Dolton, IL
 Project ID Name: 94-063
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Metals ICAP QC
 Page 15 of 22

**MATRIX SPIKE (MS) &
 MATRIX SPIKE DUPLICATE (MSD) SUMMARY
 PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
 Metals in TCLP Leachate**

Acceptability Limits %

Work Order #: E94-063-42

RPD: 20

Collector's Sample #: D-3 (4-6)

% Recovery: 80 - 120

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.3723	2.141	2.123	88	88	1
Chromium	0.1	<0.04	0.0814	0.0783	81	78	4
Silver	0.05	<0.03	0.0293	0.0283	59*	57*	1

Work Order #: E94-063-48

Collector's Sample #: W-2 (4-6)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.4507	2.206	2.237	88	89	2
Chromium	0.1	<0.04	0.0819	0.0819	82	82	0
Silver	0.05	<0.03	0.0301	0.0327	60*	65*	2

Work Order #: E94-063-54

Collector's Sample #: BC-6 (1-2)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.8445	2.488	2.425	82	79	4
Chromium	0.1	<0.04	0.0891	0.0892	89	89	0
Silver	0.05	<0.03	0.0361	0.0348	72*	70*	6

Work Order #: E94-063-55

Collector's Sample #: BC-7 (1-2)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.8762	2.594	2.582	86	85	1
Chromium	0.1	<0.04	0.0957	0.0857	96	86	11
Silver	0.05	<0.03	0.0334	0.0329	67*	66*	2

* Low Silver recovery confirmed by redigestion.

Project ID #: Dolton, IL
Project ID Name: 94-063
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals ICAP QC

Page 16 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Metals in TCLP Leachate**

Acceptability Limits %

Work Order #: E94-063-67

RPD: 20

Collector's Sample #: WR-1 (2-3)

% Recovery: 80 - 120

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.4204	2.144	2.147	86	86	0
Chromium	0.1	<0.04	0.0819	0.0822	82	82	0
Silver	0.05	<0.03	0.0362	0.0355	72*	71*	1

Work Order #: E94-063-32

Collector's Sample #: 5-1 (1-3)

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	MSD Conc. mg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.4175	2.177	2.146	88	86	2
Chromium	0.1	<0.04	0.0881	0.0816	88	82	8
Silver	0.05	<0.03	0.0383	0.0342	77*	68*	2

* Low Silver recovery confirmed by redigestion.

Project ID #: Dolton, IL
Project ID Name: 94-063
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals Method 7470 QC
Page 17 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Metals in TCLP Leachate

Acceptability Limits %

Work Order #: E94-063-05

RPD: 20

Collector's Sample #: EF-2 (1-3)

% Recovery: 80 - 120

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.47	2.58	99	103	4

Work Order #: E94-063-07

Collector's Sample #: EF-3 (1-3)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.4	2.5	96	100	4

Work Order #: E94-063-15

Collector's Sample #: FF-2 (1-3)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.44	2.56	98	102	5

Work Order #: E94-063-17

Collector's Sample #: FF-3 (1-3)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.45	2.46	98	98	0

Work Order #: E94-063-24

Collector's Sample #: W-5 (1-3)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.4	2.47	96	99	3

Work Order #: E94-063-31

Collector's Sample #: 6-1 (18-20)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.43	2.43	97	97	0

Project ID #: Dolton, IL
Project ID Name: 94-063
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals Method 7470 QC

Page 18 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Metals in TCLP Leachate**

Acceptability Limits %

RPD: 20

% Recovery: 80 - 120

Work Order #: E94-063-42

Collector's Sample #: D-3 (4-6)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.37	2.39	95	96	1

Work Order #: E94-063-48

Collector's Sample #: W-2 (4-6)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.48	2.45	99	98	1

Work Order #: E94-063-67

Collector's Sample #: WR-1 (2-3)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.41	2.45	96	98	2

Work Order #: E94-063-55

Collector's Sample #: BC-7 (1-2)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.42	2.42	97	97	0

Work Order #: E94-063-32

Collector's Sample #: 5-1 (1-3)

Analyte	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	2.5	<0.0008	2.44	2.38	98	95	2

Project ID #: Dolton, IL
 Project ID Name: 94-063
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Metals GFAA QC
 Page 19 of 22

**MATRIX SPIKE (MS) &
 MATRIX SPIKE DUPLICATE (MSD) SUMMARY
 PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
 Metals in TCLP Leachate**

Acceptability Limits %

RPD: 20

Analyte: Arsenic

% Recovery: 80 - 120

Work Order #	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
05	50	1.7	58.9	58.8	114	114	0
07	50	0.1	53.1	53.5	106	107	1
14	50	1	49	49.6	96	97	1
15	50	2.1	49.2	52.1	94	100	6
17	50	5	60	59	110	108	2
24	50	0.3	52.2	51.7	104	103	1
31	50	3	53.3	53.9	101	102	1
32	50	0	52.6	52.9	105	106	1
40	50	3.7	60.2	58.3	113	109	3
42	50	0.5	53.9	53	107	105	2
48	50	0.7	53.2	53.5	105	106	1
54	50	0.2	44.9	45.9	89	91	2
55	50	0	51.3	51.9	103	104	1
67	50	1.3	55.8	55.8	109	109	0

Project ID #: Dolton, IL
Project ID Name: 94-063
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals GFAA QC

Page 20 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Metals in TCLP Leachate**

Acceptability Limits %

RPD: 20

Analyte: Cadmium

% Recovery: 80 - 120

Work Order #	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
05	5	1.23	5.68	5.79	89	91	2
07	5	4.03	8.72	8.69	94	93	1
14	5	0.59	5.23	5.01	93	88	5
15	5	1.83	6.5	6.56	93	95	1
17	5	2.16	6.63	6.68	89	90	1
24	5	0.24	4.83	4.77	92	91	1
31	5	0.13	4.39	4.42	85	86	1
32	5	0.21	4.88	4.83	93	92	1
40	5	0.65	5.39	5.61	95	99	5
42	5	0.8	5.54	5.47	95	93	1
48	5	0.6	5.19	5.46	92	97	6
54	5	33.5	34.25	34.65	15*	23*	8
55	5	43.45	48.35	49.15	98	114	15
67	5	1.73	6.3	5.98	91	85	7

* Low spike recovery due to high analyte concentration in the sample.

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals GFAA QC

Page 21 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Metals in TCLP Leachate

Acceptability Limits %

RPD: 20

Analyte: Lead

% Recovery: 80 - 120

Work Order #	Spike Added mg/l	Sample Conc. µg/l	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
05	10	3.2	11.6	13.3	84	101	18
07	10	1.4	10.8	10.2	94	88	7
14	10	4.4	14.6	13.8	102	94	8
15	10	6.9	14.3	14.7	74*	78*	5
17	10	77.6	88	86.5	104	89	18
24	10	0	8.9	8.1	89	81	9
31	10	1	9.8	10.1	88	91	4
32	10	0.2	8.5	8.3	83	81	2
40	10	5.5	13.6	14.4	81	89	9
42	10	2.7	11.6	12	89	93	4
48	10	0.8	10	11.6	92	108	16
54	10	4.9	13.3	14.3	84	94	11
55	10	26.4	35.4	36	90	96	6
67	10	7.4	15.5	15.4	81	80	1

* Low recovery due to matrix effect confirmed by redigestion.

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals GFAA QC

Page 22 of 22

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Metals in TCLP Leachate

Acceptability Limits %

RPD: 20

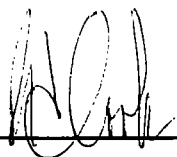
Analyte: Selenium

% Recovery: 80 - 120

Work Order #	Spike Added mg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
05	50	0	45	40	90	80	12
07	50	0	36.9	36.8	74*	74*	0
14	50	0.5	44.6	45.4	88	90	2
15	50	0	43.6	40.6	87	81	7
17	50	0	42	40	84	80	5
24	50	0	44.4	45.8	89	92	3
31	50	1	45	40	88	78	12
32	50	0	43.6	43.2	87	86	1
40	50	0.4	37	38.6	73*	76*	4
42	50	0	40.6	41	81	82	1
48	50	0	43.4	45	87	90	4
54	50	0.3	45.6	45.4	91	90	0
55	50	0	39.6	38.2	79*	76*	4
67	50	0	41	44.8	82	90	9

* Low recovery due to matrix effect confirmed by redigestion.

Review / Date:

 2/17/95

APPENDIX F-3

CHAIN-OF-CUSTODY/SAMPLE-ANALYSIS REQUEST FORMS

[illegible]

COMMENTS/REMARKS:		REQUESTED TAT
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SAMPLE TRANSFER RECORD

RELINQUISHED BY		DATE	TIME	RECEIVED BY	DATE	TIME
NATURE OF COLLECTOR: <i>Photo P. J. Wolf</i>		<i>9/12</i>	<i>7:50</i>	<i>Photo P. J. Wolf</i>	<i>9/12/94</i>	<i>7:50</i>

SK TCLP LAB USE ONLY

TEMPERATURE WHEN RECEIVED 0 °C U.S. SHIPPED VIA UPS FED EX ☒ OTHER
 SAMPLE KIT OPENED AND CHECKED IN BY U.S. AT 900 ON 9/12
 P.C. SEALS SIGNED, DATED, AND INTACT ON ALL SAMPLE JARS? YES NO IF NO, EXPLAIN _____



Project No.: 32-02		Today's Date: 9/14/94		Date Results Requested: STANDARD T-A-T		Analyses Requested													
Sampler's Name: D. Gilmer/C. DeWolf			Phone No.: 307-745-7474		Fax No.: 307-745-7729		VOCs 8240 SVOCs 8270 Metals TCLP PCBs 8080												
Company Name and Address: TriHydro Corporation 410 Grand Avenue Laramie, WY 82070			Company Contact: JACK BEDESSEM CHARLIE DeWOLF																
Collector's Sample No.		Sample Matrix		Date Sampled/ Time Sampled		No. of Containers													
✓ D-2 (1-3) ✓		SOIL		9/13/94 1545		4 BRASS 0 JARS													
2 D-2 (18-20) ✓		SOIL		9/13/94 1600		2 BRASS 1 JAR													
5 FF-1 (1-3) ✓		SOIL		9/13/94 1700															
4 FF-1 (18-20) ✓		SOIL		9/14/94 835															
5 FF-2 (1-3) ✓		SOIL		9/14/94 0900															
6 FF-2 (18-20) ✓		SOIL		9/14/94 0920															
7 FF-3 (1-3) ✓		SOIL		9/14/94 1015															
8 FF-3 (18-20) ✓		SOIL		9/14/94 1050															
Remarks: See Notes on p. 1																			
Relinquished by: Thomas C. Miller		Affiliation: TriHydro		Date/Time: 9/14/94 1500		Received by: [Signature]		Affiliation: Teh		Date/Time: 9/14/94 4:40									
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:									
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:									
Were samples received in good condition?				Remarks:															



Project No.: 32-02		Today's Date: 9/14/94		Date Results Requested: STANDARD T-A-T		Analyses Requested																	
Sampler's Name: Charles DeWolf/Doug Gilmer			Phone No.: 307-745-7474		Fax No.: 307-745-7729																		
Company Name and Address: TriHydro Corporation 410 Grand Avenue Laramie, WY 82070			Company Contact:																				
Collector's Sample No.		Sample Matrix		Date Sampled/ Time Sampled		No. of Containers																	
10-1 (1-3) ✓		SOIL		9/14/94 1100		2 BRASS 1 JAR		VOCs 8240 SVOCs 8270 Metals TCLP PCBs 8080															
10-1 (18-20) ✓		SOIL		9/14/94 1115		↓																	
CD-1 (1-3) ✓		SOIL		9/14/94 1130		↓																	
Remarks: see notes on p. 1																							
Relinquished by: Thomas C. Miller		Affiliation: TriHydro		Date/Time: 9/14/94 1500		Received by: Doug Gilmer		Affiliation: TriHydro		Date/Time: 9/14/94 4:40													
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:													
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:													
Were samples received in good condition?				Remarks:																			

Er, Pb, Hg,
Se, Ag)



Project No.: 32-02		Today's Date: 9/15/94		Date Results Requested: STANDARD T-A-T		Analyses Requested																
Sampler's Name: Charlie DeWolf			Phone No.: 307-745-7474		Fax No.: 307-745-7729		VOCs 8240 SVOCs 8270 Metals TCLP PEBS 8080															
Company Name and Address: TriHydro Corporation 410 Grand Avenue Laramie, WY 82070			Company Contact: Jack Belessem Charlie DeWolf																			
Collector's Sample No.	Sample Matrix	Date Sampled/ Time Sampled	No. of Containers																			
6-1(1-3)	SOIL	9/15/94 0850 0910	2 BRASS 1 JAR			X	X	X														
6-1(18-20)	SOIL	9/15/94 0910	2 BRASS 1 JAR			X	X	X														
5-1(1-3)	SOIL	9/15/94 0950	2 BRASS JAR			X	X	X														
5-1(18-20)	SOIL 33	9/15/94 1130	2 BRASS 1 JAR			X	X	X														
Remarks: See p. 1																						
Relinquished by: [Signature]		Affiliation: TRIHYDRO		Date/Time: 9-15-94		Received by: [Signature]		Affiliation: [Signature]		Date/Time:												
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:												
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:												
Were samples received in good condition?				Remarks:																		

94-063

CHAIN-OF-CUSTODY RECORD

Page 1 01

Project No.: 32-02		Today's Date: 9/17/94		Date Results Requested: STANDARD T-A-T		Analyses Requested														
Sampler's Name: Charlie DeWolf			Phone No.: 307-745-7474		Fax No.: 307-745-7729		VOCs 8240 SVOCs 8240 Metals TCLP PCBs 8080													
Company Name and Address: TriHydro Corporation 410 Grand Avenue Laramie, WY 82070			Company Contact: Jack Becklessem Charlie DeWolf																	
Collector's Sample No.	Sample Matrix	Date Sampled/ Time Sampled	No. of Containers																	
✓ 5-2 (1-3)	SOIL	9/15/94 1410	2 BRASS 1 JAR																	
✓ 5-2 (18-20)	SOIL	9/15/94 1430	2 BRASS 1 JAR																	
✓ W-4 (1-3)	SOIL	9/15/94 1525	2 BRASS 1 JAR																	
✓ W-4 (18-20)	SOIL	9/15/94 1550	2 BRASS 1 JAR																	
✓ W-6 (1-3)	SOIL	9/15/94 1620	2 BRASS 1 JAR																	
✓ W-6 (18-20)	SOIL	9/15/94 1635	2 BRASS 1 JAR																	
✓ D-1 (1-3)	SOIL	9/16/94 0820	2 BRASS 1 JAR																	
✓ D-1 (18-20)	SOIL	9/16/94 0840	2 BRASS 1 JAR																	
Remarks: Same as previous instructions. See attached constituent lists.				NOTE: D-1(1-3) VOCs D-1(18-20) SVOCs PCBs on D-1(1-3), W-6(1-3), W-2(4-6)				Sample marked end on brass ring												
Relinquished by: [Signature]	Affiliation: TriHydro	Date/Time: 9/17/94 115	Received by: [Signature]	Affiliation: SI	Date/Time: 9/17/94															
Relinquished by:	Affiliation:	Date/Time:	Received by:	Affiliation:	Date/Time:															
Relinquished by:	Affiliation:	Date/Time:	Received by:	Affiliation:	Date/Time:															
Were samples received in good condition?			Remarks:																	

44-063

CHAIN-OF-CUSTODY RECORD

Page 1 of 01

Project No.: 32-02		Today's Date: 9/19/94		Date Results Requested: RUSH		Analyses Requested														
Sampler's Name: Charlie DeWolf		Phone No.: 307-745-7474		Fax No.: 307-745-7729		<div style="display: flex; justify-content: space-between;"> <div>VOCs 8240</div> <div>SVOCs 8290</div> <div>PCBs 8080</div> <div>Metals TCLP</div> </div>														
Company Name and Address: TriHydro Corporation 410 Grand Avenue Laramie, WY 82070		Company Contact: JACK BEDESSEM CHARLIE DEWOLF																		
Collector's Sample No.	Sample Matrix	Date Sampled/ Time Sampled	No. of Containers																	
✓ BC-2A(1-2)	SOIL 50	9/17/94 1545	3 JARS	X	X															
✓ BC-3(1-2)	SOIL	9/17/94 1300	3 JARS	X	X															
✓ BC-4(1-2)	SOIL	9/17/94 1530	3 JARS	X	X															
✓ BC-5(1-2)	SOIL 5'	9/17/94 1445	3 JARS	X	X															
✓ BC-6(1-2)	SOIL 11'	9/17/94 1500	3 JARS	X	X															
✓ BC-7(1-2)	SOIL	9/17/94 1515	3 JARS	X	X															
✓ BC-8(1-2)	SOIL	9/17/94 1530	3 JARS	X	X															
BC-9(1-2)	SOIL	9/17/94 1550	3 JARS	X	X															
Remarks: NOTE: 1 202 JAR VOCs, 1 402 JAR-SVOCs, 1 402 JAR METALS RUSH! See Attached cash/bert list																				
Relinquished by: <i>[Signature]</i>		Affiliation: TRIHYDRO		Date/Time: 9/17/94		Received by: <i>[Signature]</i>		Affiliation: D.S.I.		Date/Time: 9/19/94										
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation: Tech		Date/Time: 9/19/94 1:00										
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:										
Were samples received in good condition?				Remarks:																

1

Project No.:		Today's Date:		Date Results Requested:		Analyses Requested																	
32-02		9/17/94		STANDARD T-A-T																			
Sampler's Name:				Phone No.:		Fax No.:																	
Charlie DeWolf				307-745-7474		307-745-7729																	
Company Name and Address:				Company Contact:																			
TriHydro Corporation 410 Grand Avenue Laramie, WY 82070				JACK BEDESSEN Charlie DeWolf																			
Collector's Sample No.	Sample Matrix	Date Sampled/ Time Sampled	No. of Containers																				
5-3 (4-6)	SOIL	9/16/94 1455	2 BRASS 1 JAR																				
5-3 (18-20)	SOIL	9/16/94 1500	2 BRASS 1 JAR																				
PB-1 (0.5-2.5)	SOIL	9/16/94 1515	2 BRASS 3 JAR																				
PB-2 (0.5-2.5)	SOIL	9/16/94 1550	3 BRASS 1 JAR																				
CD-4 (18-20)	SOIL	9/16/94 1300	2 BRASS 1 JAR																				
CD-5 (4-6)	SOIL	9/16/94 1340	2 BRASS 1 JAR																				
Remarks: Note: CD-4 (18-20) 1 BRASS + 1 JAR ONLY, PB-1, PB-2, 3 BRASS.																							
STANDARD T-A-T																							
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:													
Charlie DeWolf		TRIHYDRO		9/17/94		[Signature]		D.S.T.		9/19/94													
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:													
						[Signature]		TRD		9/19/94 2:00													
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:													
Were samples received in good condition?				Remarks:																			

Page 0

Page 0



Project No.: 32-02		Today's Date: 9/19/94		Date Results Requested: RUSH		Analyses Requested													
Sampler's Name: Charlie DeWolf			Phone No.: 307-745-7474		Fax No.: 307-745-7729		VOC 8240 SVOC 8270 METALS TCLP												
Company Name and Address: TriHydro Corporation 410 Grand Avenue Laramie, WY 82070			Company Contact: JACK BEDESSEN																
Collector's Sample No.		Sample Matrix		Date Sampled/ Time Sampled		No. of Containers													
BC-D1		SOLID		9/17/94		3 JAR		X X X											
BC-D2		SOLID		9/17/94		3 JAR		HOLD FOR INSTRUCTIONS											
Remarks: Confirm Analytical Parameters w/ T. Nissey																			
Relinquished by: [Signature]		Affiliation: TRIHYDRO		Date/Time: 9/19/94 10:10		Received by: [Signature]		Affiliation: Tech Center		Date/Time: 9/19/94 2:00									
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:									
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:									
Were samples received in good condition?				Remarks:															

APPENDIX F-4

SOIL QUALITY DATA SUMMARY TABLES

Table F-4-1. Soil Quality Data, Volatile Organic Compounds (VOCs) Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Acetone	Benzene	Bromo- methane	Carbon Disulfide	Chloro- benzene	Chloro- ethane	Chloro- methane	1,1-Di- chloro- ethane	1,2-Di- chloro- ethane	1,1-Di- chloro- ethene	cis-1,2-Di- chloro- ethene	trans-1,2- Dichloro- ethylene	1,2-Di- chloro- propane	trans-1,3- Dichloro- propene	Ethyl- benzene
<u>East Field</u>															
EF-1 (1-3)	14	0.24	ND(0.025)	0.166	ND(0.025)	ND(0.025)	ND(0.025)	6.12	0.387	0.642	11.6	0.061	ND(0.025)	0.184	10.5
EF-1 (18-20)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-2 (1-3)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-2 (18-20)	0.13	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-3 (1-3)	ND(0.1)	ND(0.025)	0.083	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-3 (18-20)	0.25	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-4 (1-3)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
EF-4 (18-20)	4.4	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
<u>Former Southeast Field</u>															
FF-1 (1-3)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.03	ND(0.025)	ND(0.025)
FF-1 (18-20)	0.39	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.03	ND(0.025)	ND(0.025)
FF-2 (1-3)	ND(0.1)	0.026	0.049	ND(0.1)	ND(0.025)	ND(0.025)	0.044	ND(0.025)	ND(0.025)	0.087	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
FF-2 (18-20)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
FF-3 (1-3)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
FF-3 (18-20)	0.436	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
<u>Truck Station 10</u>															
10-1 (1-3)	0.77	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.18	ND(0.025)	ND(0.025)	ND(0.025)	5.1
CD-1 (1-3)	0.37	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	11
10-1 (18-20)	0.2	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.97
10-2 (1-3)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	0.79	ND(0.025)	ND(0.025)	0.49	ND(0.025)	ND(0.025)	0.44	ND(0.025)	ND(0.025)	ND(0.025)	53
CD-2 (1-3)	0.186	0.033	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	0.082	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	1.03
10-2 (18-20)	0.12	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	0.084	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.37
<u>Former Tank Farm D/Truck Station No. 3</u>															
D-1 (1-3)	1.9	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	0.043	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.038
D-1 (18-20)	0.24	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
D-2 (1-3)	0.168	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.034	ND(0.025)	ND(0.025)	ND(0.025)	0.072
D-2 (18-20)	0.18	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)

Table F-4-1. Soil Quality Data, Volatile Organic Compounds (VOCs) Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Acetone	Benzene	Bromo- methane	Carbon Disulfide	Chloro- benzene	Chloro- ethane	Chloro- methane	1,1-Di- chloro- ethane	1,2-Di- chloro- ethane	1,1-Di- chloro- ethene	cis-1,2-Di- chloro- ethene	trans-1,2- Dichloro- ethylene	1,2-Di- chloro- propane	trans-1,3- Dichloro- propene	Ethyl- benzene
D-3 (4-6)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
D-3 (18-20)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
<u>West Tank Farm/Driveway to Facility/Process Building</u>															
W-1 (1-3)	0.328	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.115
W-1 (18-20)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
W-2 (4-6)	0.15	0.036	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.13	ND(0.025)	ND(0.025)	0.95	ND(0.025)	ND(0.025)	ND(0.025)	0.036
CD-5 (4-6)	0.22	0.029	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	0.056	ND(0.025)	ND(0.025)	3.6	ND(0.025)	ND(0.025)	ND(0.025)	0.044
W-2 (18-20)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
W-3 (4-6)	0.19	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
W-3 (18-20)	0.21	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
CD-4 (18-20)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
W-4 (1-3)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
W-4 (18-20)	0.32	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
W-5 (1-3)	0.75	ND(0.025)	ND(0.025)	ND(0.1)	0.38	ND(0.025)	ND(0.025)	0.92	ND(0.025)	ND(0.025)	0.1	ND(0.025)	ND(0.025)	ND(0.025)	1.5
CD-3 (1-3)	6.92	0.101	ND(0.025)	ND(0.1)	ND(0.025)	2.33	ND(0.025)	2.81	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.2	0.159
W-5 (18-20)	0.14	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
W-6 (1-3)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.68	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.14
W-6 (18-20)	0.12	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
W-7 (3.5-5.5)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
W-7 (18-20)	0.17	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
PB-1 (0.5-2.5)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
PB-2 (0.5-2.5)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
<u>Truck Station No. 5/North Warehouse Pad</u>															
5-1 (1-3)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
5-1 (18-20)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
5-2 (1-3)	ND(0.1)	ND(0.025)	0.094	ND(0.1)	ND(0.025)	ND(0.025)	0.29	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
5-2 (18-20)	0.12	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.51	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)

Table F-4-1. Soil Quality Data, Volatile Organic Compounds (VOCs) Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Acetone	Benzene	Bromo- methane	Carbon Disulfide	Chloro- benzene	Chloro- ethane	Chloro- methane	1,1-Di- chloro- ethane	1,2-Di- chloro- ethane	1,1-Di- chloro- ethene	cis-1,2-Di- chloro- ethene	trans-1,2- Dichloro- ethylene	1,2-Di- chloro- propane	trans-1,3- Dichloro- propene	Ethyl- benzene
5-3 (4-6)	0.14	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
5-3 (18-20)	0.12	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
6-1(1-3)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	0.037	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
6-1 (18-20)	0.15	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.04	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)

¹ Sample depths in parentheses given in feet below ground surface.

Note: Qualified data shown in italics. ND in "All Others" column is italicized if one or more non-detected constituents are qualified.

Table F-4.1. Soil Quality Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples*	2-Hex- anone	Methy- lene Chloride	2-Buta- none (MEK)	4-Methyl-2 Pen- tanone	Styrene	Tetra- chloro- ethene (PERC)	Toluene	1,1,1- Trichloro- ethane	1,1,2- Trichloro- ethane	Trichloro- ethylene	Trichloro- fluoro- methane	1,1,2- Trichloro- trifluoro- ethane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)	All Others
<u>East Field</u>																
EF-1 (1-3)	ND(0.05)	0.027	22.9	10.4	ND(0.025)	11	12.4	10.6	1.64	8.54	ND(0.05)	ND(0.05)	0.292	ND(0.035)	22.3	ND
EF-1 (18-20)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	0.14	ND
EF-2 (1-3)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.025	ND(0.05)	ND(0.05)	ND(0.025)	0.33	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
EF-2 (18-20)	ND(0.05)	0.031	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	1.4	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
EF-3 (1-3)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.035	ND(0.05)	ND(0.05)	ND(0.025)	0.056	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
EF-3 (18-20)	ND(0.05)	0.037	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.048	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
EF-4 (1-3)	ND(0.05)	0.037	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	0.03	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
EF-4 (18-20)	ND(0.05)	ND(0.025)	0.54	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
<u>Former Southeast Field</u>																
FF-1 (1-3)	ND(0.05)	0.056	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.047	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
FF-1 (18-20)	ND(0.05)	0.053	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.042	ND(0.05)	ND(0.05)	ND(0.025)	0.4	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
FF-2 (1-3)	ND(0.05)	0.031	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.042	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	0.083	ND(0.035)	ND(0.025)	ND
FF-2 (18-20)	ND(0.05)	0.018	ND(0.1)	ND(0.005)	ND(0.005)	ND(0.005)	0.008	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	0.034	ND(0.05)	ND(0.01)	ND(0.005)	ND
FF-3 (1-3)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.031	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
FF-3 (18-20)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.026	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
<u>Truck Station 10</u>																
10-1 (1-3)	ND(0.05)	ND(0.025)	0.25	18	0.24	ND(0.025)	151	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	26	ND
CD-1 (1-3)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	0.47	ND(0.025)	299	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	59	ND
10-1 (18-20)	ND(0.05)	ND(0.025)	ND(0.1)	1.0	ND(0.025)	ND(0.025)	13	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	4.7	ND
10-2 (1-3)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	1.2	ND(0.025)	14	0.25	ND(0.05)	ND(0.025)	ND(0.05)	9.5	ND(0.05)	ND(0.035)	179	ND
CD-2 (1-3)	ND(0.05)	0.071	ND(0.1)	0.042	ND(0.025)	0.043	0.147	ND(0.05)	ND(0.05)	0.05	0.214	0.878	ND(0.05)	ND(0.035)	1.07	ND
10-2 (18-20)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	0.15	ND(0.025)	0.46	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	1.7	ND
<u>Former Tank Farm D/Truck Station No. 3</u>																
D-1 (1-3)	ND(0.05)	0.048	0.4	ND(0.05)	ND(0.025)	ND(0.025)	1.4	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	0.96	ND
D-1 (18-20)	ND(0.05)	0.21	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.045	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
D-2 (1-3)	ND(0.05)	ND(0.025)	0.224	ND(0.05)	ND(0.025)	0.303	0.421	0.458	ND(0.05)	0.332	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	0.804	ND
D-2 (18-20)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.032	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND

Table F-4-1. Soil Quality Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	2-Hex- anone	Methy- lene Chloride	2-Buta- none (MEK)	4-Methyl-2 Pen- tanone	Styrene	Tetra- chloro- ethene (PERC)	Toluene	1,1,1- Trichloro- ethane	1,1,2- Trichloro- ethane	Trichloro- ethylene	Trichloro- fluoro- methane	1,1,2- Trichloro- trifluoro- ethane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)	All Others
D-3 (4-6)	ND(0.05)	0.043	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
D-3 (18-20)	ND(0.05)	0.058	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
<u>West Tank Farm/Driveway to Facility/Process Building</u>																
W-1 (1-3)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.271	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	0.26	ND
W-1 (18-20)	ND(0.05)	0.068	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	0.34	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
W-2 (4-6)	ND(0.05)	0.042	ND(0.1)	0.14	ND(0.025)	ND(0.025)	0.53	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	1.6	0.68	ND
CD-5 (4-6)	ND(0.05)	ND(0.025)	ND(0.1)	0.11	ND(0.025)	ND(0.025)	0.45	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	2	0.38	ND
W-2 (18-20)	ND(0.05)	0.06	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
W-3 (4-6)	ND(0.05)	0.069	ND(0.1)	ND(0.05)	ND(0.025)	0.035	0.036	ND(0.05)	ND(0.05)	0.028	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	0.059	ND
W-3 (18-20)	ND(0.05)	0.1	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.032	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
CD-4 (18-20)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.029	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
W-4 (1-3)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
W-4 (18-20)	ND(0.05)	0.26	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.028	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
W-5 (1-3)	ND(0.05)	0.096	0.24	8.7	ND(0.025)	1.5	82	0.49	ND(0.05)	0.028	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	8.8	ND
CD-3 (1-3)	ND(0.05)	0.344	3.72	4.7	ND(0.025)	0.163	9.56	0.733	ND(0.05)	0.157	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	0.872	ND
W-5 (18-20)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
W-6 (1-3)	ND(0.05)	0.15	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.15	ND(0.05)	ND(0.05)	ND(0.025)	0.21	ND(0.05)	ND(0.05)	ND(0.035)	0.065	ND
W-6 (18-20)	ND(0.05)	0.056	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
W-7 (3.5-5.5)	ND(0.05)	0.043	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
W-7 (18-20)	ND(0.05)	0.071	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
PB-1 (0.5-2.5)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
PB-2 (0.5-2.5)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
<u>Truck Station No. 5/North Warehouse Pad</u>																
5-1 (1-3)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
5-1 (18-20)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
5-2 (1-3)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.12	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
5-2 (18-20)	ND(0.05)	0.12	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.6	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND

Table F-4-1. Soil Quality Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	2-Hex- anone	Methy- lene Chloride	2-Buta- none (MEK)	4-Methyl-2 Pen- tanone	Styrene	Tetra- chloro- ethene (PERC)	Toluene	1,1,1- Trichloro- ethane	1,1,2- Trichloro- ethane	Trichloro- ethylene	Trichloro- fluoro- methane	1,1,2- Trichloro- trifluoro- ethane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)	All Others
5-3 (4-6)	ND(0.05)	0.05	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.036	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
5-3 (18-20)	ND(0.05)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	0.037	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
6-1(1-3)	<i>ND(0.05)</i>	ND(0.025)	ND(0.1)	<i>ND(0.05)</i>	<i>ND(0.025)</i>	<i>ND(0.025)</i>	<i>0.11</i>	ND(0.05)	<i>ND(0.05)</i>	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	<i>ND(0.025)</i>	<i>ND</i>
6-1 (18-20)	ND(0.05)	0.061	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	0.092	ND(0.05)	ND(0.035)	ND(0.025)	ND

¹ Sample depths in parentheses given in feet below ground surface.

Note: Qualified data shown in italics. ND in "All Others" column is italicized if one or more non-detected constituents are qualified.

Table F-4-2. Soil Quality Data, Volatile Organic Compounds (VOCs) Phase I RFI, Barker Chemical No. 2 Site, Dolton, Illinois.

Samples ¹	Acetone	Benzene	Bromo- methane	Carbon Disulfide	Chloro- benzene	Chloro- ethane	Chloro- methane	1,1-Di- chloro- ethane	1,2-Di- chloro- ethane	1,1-Di- chloro- ethene	cis-1,2-Di- chloro- ethene	trans-1,2- Dichloro- ethylene	1,2-Di- chloro- propane	trans-1,3- Dichloro- propene	Ethyl- benzene	2-Hex- anone
BC-2(1-2)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)
BC-3 (1-2)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	<i>0.089</i>
BC-4 (1-2)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)
BC-5 (1-2)	0.416	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)
BC-2A (1-2)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)
BC-6 (1-2)	0.113	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.036	ND(0.05)
BC-7 (1-2)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)
BC-8 (1-2)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.246	ND(0.05)
BC-9 (1-2)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)
BC-10 (1-2)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)
BC-11 (1-2)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.042	ND(0.05)
BC-12 (1-2)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)
BC-D1	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)
BC-D2	0.54	ND(0.025)	ND(0.025)	ND(0.1)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	1.3	28

¹ Sample depths in parentheses given in feet below ground surface.
Note: Qualified data indicated in italics.

Table F-4-2. Soil Quality Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Methylene Chloride	2-Butanone (MEK)	4-Methyl-2-Pentanone	Styrene	Tetra-chloro-ethene (PERC)	Toluene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethylene	Trichloro-fluoro-methane	1,1,2-Trichloro-2-fluoro-ethane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)	All Others
BC-2(1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.035)	ND(0.025)	ND
BC-3 (1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	<i>0.048</i>	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
BC-4 (1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	<i>0.406</i>	<i>0.067</i>	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
BC-5 (1-2)	<i>0.033</i>	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	<i>0.245</i>	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
BC-2A (1-2)	ND(0.005)	ND(0.1)	ND(0.05)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.005)	ND
BC-6 (1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	<i>0.108</i>	<i>0.046</i>	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	<i>0.036</i>	ND
BC-7 (1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	<i>0.041</i>	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
BC-8 (1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	<i>0.147</i>	<i>0.041</i>	ND(0.05)	<i>0.281</i>	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	<i>0.531</i>	ND
BC-9 (1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	<i>0.066</i>	<i>0.05</i>	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
BC-10 (1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	<i>0.349</i>	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
BC-11 (1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	<i>0.086</i>	<i>0.039</i>	ND(0.05)	<i>0.1</i>	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
BC-12 (1-2)	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	<i>0.029</i>	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
BC-D1	ND(0.025)	ND(0.1)	ND(0.05)	ND(0.025)	ND(0.025)	<i>0.028</i>	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	ND(0.025)	ND
BC-D2	ND(0.025)	<i>0.2</i>	<i>0.4</i>	ND(0.025)	ND(0.025)	<i>0.41</i>	ND(0.05)	ND(0.05)	ND(0.025)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.035)	<i>14</i>	ND

¹ Sample depths in parentheses given in feet below ground surface.

Note: Qualified data indicated in italics.

Table F-4-3. Soil Quality Data, Semi-Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Phenol	1,2-Dichloro-benzene	2-Methyl-phenol	4-Methyl-phenol	2,4-Dimethyl-phenol	Naphthalene	2-Methylnaphthalene	Diethyl-phthalate	Phenanthrene	Di-n-butyl-phthalate	Fluoranthene	Pyrene	Chrysene	bis(2-Ethylhexyl) phthalate	Benzo(k) fluoranthene	All Others
East Field																
EF-1 (1-3)	ND(0.66)	1.3	3.4	4.4	4.8	1.90	ND(0.66)	ND(0.66)	ND(0.66)	1.0	ND(0.66)	ND(0.66)	ND(0.66)	2.4	ND(0.66)	ND
EF-1 (18-20)	3.5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	1.8	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
EF-2 (1-3)	4.0	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	2.3	ND(0.66)	ND(0.66)	ND(0.66)	9.4	ND(0.66)	ND
EF-2 (18-20)	2.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
EF-3 (1-3)	2.6	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	2.4	ND(0.66)	ND
EF-3 (18-20)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	4.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
EF-4 (1-3)	4.5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	0.66	ND(0.66)	ND(0.66)	ND(0.66)	ND
EF-4 (18-20)	5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	4.2	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
Former Southeast Field																
FF-1 (1-3)	2.6	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	1.2	1.4	ND(0.66)	1.5	1.4	0.75	1.1	0.88	13.7	ND(0.66)	ND
FF-1 (18-20)	5.1	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	3.4	ND(0.66)	ND
FF-2 (1-3)	3.1	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	3.5	ND(0.66)	ND
FF-2 (18-20)	5.1	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
FF-3 (1-3)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
FF-3 (18-20)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
Truck Station 10																
10-1 (1-3)	3	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
CD-1 (1-3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.7)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	8.2	7.9	ND(3.3)	17.4	8.8	ND
10-1 (18-20)	3.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	2.8	ND(0.66)	ND
10-2 (1-3)	2.8	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	7.5	ND(0.66)	ND
CD-2 (1-3)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	1.6	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
10-2 (18-20)	6.8	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	5.2	ND(0.66)	ND

Table F-4-3. Soil Quality Data, Semi-Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Phenol	1,2-Dichloro- benzene	2-Methyl- phenol	4-Methyl- phenol	2,4-Dimethyl- phenol	Naphth- alene	2-Methyl- naphtha- lene	Diethyl- phthalate	Phenan- threne	Di-n- butyl- phtha- late	Fluor- anthene	Pyrene	Chrysene	bis(2- Ethyl- hexyl) phthalate	Benzo(k) fluor- anthene	All Others
<u>Former Tank Farm D/Truck Station No. 3</u>																
D-1 (1-3)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	2.7	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
D-1 (18-20)	9.6	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
D-2 (1-3)	1.8	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	1.2	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
D-2 (18-20)	1.9	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	2	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
D-3 (4-6)	5.2	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
D-3 (18-20)	7.2	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	6.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
<u>West Tank Farm/Driveway to Facility/Process Building</u>																
W-1 (1-3)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-1 (18-20)	2.5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	1.5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-2 (4-6)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	1.7	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
CD-5 (4-6)	5.6	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-2 (18-20)	6.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	1.6	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-3 (4-6)	2.2	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	1.3	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-3 (18-20)	7.2	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	2.1	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
CD-4 (18-20)	4.5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-4 (1-3)	5.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-4 (18-20)	11.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	6.3	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-5 (1-3)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
CD-3 (1-3)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	3.7	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-5 (18-20)	3.8	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-6 (1-3)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	5.7	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-6 (18-20)	7.9	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND

Table F-4-3. Soil Quality Data, Semi-Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Phenol	1,2-Dichloro-benzene	2-Methyl-phenol	4-Methyl-phenol	2,4-Dimethyl-phenol	Naphthalene	2-Methylnaphthalene	Diethylphthalate	Phenanthrene	Di-n-butylphthalate	Fluoranthene	Pyrene	Chrysene	bis(2-Ethylhexyl)phthalate	Benzo(k)fluoranthene	All Others
W-7 (3.5-5.5)	5.6	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	1.9	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
W-7 (18-20)	8.3	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	1.2	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
PB-1 (0.5-2.5)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
PB-2 (0.5-2.5)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	3.9	ND(0.66)	ND
<u>Truck Station No. 5/North Warehouse Pad</u>																
5-1 (1-3)	4.5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	2.2	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
5-1 (18-20)	5.9	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	3.8	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
5-2 (1-3)	1.8	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
5-2 (18-20)	ND(3.3)	ND(6.5)	ND(3.3)	ND(3.3)	ND(3.3)	ND(0.5) ²	ND(0.5) ²	ND(3.3)	ND(0.5) ²	ND(3.3)	ND(0.5) ²	ND(0.5) ²	ND(0.5) ²	ND(0.66)	ND(0.5) ²	ND
5-3 (4-6)	6	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	1.8	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
5-3 (18-20)	4.3	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	1.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
6-1(1-3)	2.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	1.5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
6-1 (18-20)	6.4	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	3.7	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND

¹ Sample depths in parentheses given in feet below ground surface.

² Single ion monitoring (SIM) result.

Note: Qualified data shown in italics.

Table F-4.4. Soil Quality Data, Semi-Volatile Organic Compounds (VOCs), Phase I RFI, Barker Chemical No. 2 Site, Dolton, Illinois (mg/kg).

Samples ¹	Phenol	1,2-Dichloro-benzene	2-Methyl-phenol	4-Methyl-phenol	Isophor-one	2,4-Dimethyl-phenol	Naphth-alene	2-Methyl-naphtha-lene	Diethyl-phthalate	Phenan-threne	Di-n-butyl-phtha-late	Fluor-anthene	Pyrene	Butyl-benzyl-phthalate	Chrysene	bis(2-Ethyl-hexyl) phthalate	Benzo(k) fluor-anthene	All Others
BC-2 (1-2)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	4.3	ND(0.66)	1.3	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
BC-3 (1-2)	ND(0.66)	ND(0.66)	ND(0.66)	ND	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	3.7	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
BC-4 (1-2)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	5.6	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
BC-5 (1-2)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
BC-2A (1-2)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	5.1	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND
BC-6 (1-2)	<i>ND(3.3)</i>	<i>ND(3.3)</i>	<i>ND(3.3)</i>	<i>ND(3.3)</i>	<i>ND(3.3)</i>	<i>ND(3.7)</i>	<i>ND(0.5)²</i>	<i>ND(0.5)²</i>	<i>ND(3.3)</i>	<i>ND(0.5)²</i>	<i>9.1</i>	<i>ND(0.5)²</i>	<i>ND(0.5)²</i>	<i>ND(3.3)</i>	<i>ND(0.5)²</i>	<i>56.1</i>	<i>ND(0.5)²</i>	<i>ND</i>
BC-7 (1-2)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	3.3	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	4	ND(0.66)	ND
BC-8 (1-2)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.7)	1.1 ²	ND(0.5) ²	ND(3.3)	ND(3.3)	11.9	ND(0.5) ²	ND(0.5) ²	ND(3.3)	ND(0.5) ²	16.4	ND(0.5) ²	ND
BC-9 (1-2)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.7)	ND(0.5) ²	ND(0.5) ²	ND(3.3)	ND(0.5) ²	4.6	ND(0.5) ²	ND(0.5) ²	8.6	ND(0.5) ²	11.3	ND(0.5) ²	ND
BC-10 (1-2)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.7)	ND(0.5) ²	ND(0.5) ²	ND(3.3)	ND(0.5) ²	6.6	ND(0.5) ²	ND(0.5) ²	ND(3.3)	ND(0.5) ²	9.2	ND(0.5) ²	ND
BC-11 (1-2)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.7)	ND(0.5) ²	ND(0.5) ²	ND(3.3)	ND(0.5) ²	6.3	0.6 ²	0.7 ²	ND(3.3)	0.62 ²	15.4	ND(0.5) ²	ND
BC-12 (1-2)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.74)	ND(0.66)	ND(0.66)	1.6	ND(0.66)	3.5	ND(0.66)	ND(0.66)	ND(0.66)	ND(0.66)	ND(1.7)	ND(0.66)	ND
BC-D1	ND(66)	ND(66)	ND(66)	ND(66)	ND(66)	ND(74)	ND(0.5) ²	ND(0.5) ²	ND(66)	ND(0.5) ²	ND(66)	ND(0.5) ²	ND(0.5) ²	ND(66)	ND(0.5) ²	ND(66)	ND(0.5) ²	ND
BC-D2	<i>ND(33)</i>	<i>ND(33)</i>	<i>ND(33)</i>	<i>ND(33)</i>	<i>12500</i>	<i>ND(37)</i>	<i>3320</i>	<i>754</i>	<i>ND(33)</i>	<i>ND(33)</i>	<i>68.8</i>	<i>ND(33)</i>	<i>ND(33)</i>	<i>ND(33)</i>	<i>ND(33)</i>	<i>ND(33)</i>	<i>ND(33)</i>	<i>ND</i>

¹ Sampling depths given in parentheses.

² Single ion monitoring (SIM) result.

Note: Qualified data in italics.

Table F-4-5. Soil Quality Data, Polychlorinated Biophenyls (PCBs), Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

<u>Samples¹</u>	<u>PCBs (mg/kg)</u>
<u>East Field</u>	
EF-1 (1-3)	10.91
<u>Former Tank Farm D/Truck Station No. 3</u>	
D-1 (1-3)	ND(0.05)
<u>West Tank Farm/Driveway to Facility/Process Building</u>	
W-2 (4-6)	ND(0.05)
CD-5 (4-6)	ND(0.05)
W-6 (1-3)	ND(0.05)

¹ Depths in parentheses in feet below ground surface.

Table F-4-6.

Soil Quality Data, Polychlorinated Biophenyls (PCBs),
Phase I RFI, Barker Chemical No. 2 Site, Dolton, Illinois.

Samples ¹	PCBs (mg/kg)
BC-2	0.84
BC-4 (1-2)	0.72
BC-5 (1-2)	ND(1)
BC-2A (1-2)	ND(0.05)
BC-8 (1-2)	196
BC-11 (1-2)	73.7
BC-D1	46.26

¹ Depths in parentheses in feet below ground surface.

Table F-4-7. Soil Quality Data, TCLP Metals, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	All Others
<u>East Field</u>					
EF-1 (1-3)	ND(0.005)	ND(0.1)	0.011	ND(0.002)	ND
EF-1 (18-20)	ND(0.005)	ND(0.1)	0.0078	ND(0.002)	ND
EF-2 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
EF-2 (18-20)	ND(0.005)	ND(0.1)	0.0086	ND(0.002)	ND
EF-3 (1-3)	0.008	ND(0.1)	ND(0.0075)	ND(0.002)	ND
EF-3 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
EF-4 (1-3)	0.005	ND(0.1)	0.0386	ND(0.002)	ND
EF-4 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
<u>Former Southeast Field</u>					
FF-1 (1-3)	0.0156	ND(0.1)	0.014	ND(0.002)	ND
FF-1 (18-20)	ND(0.005)	ND(0.1)	0.0088	ND(0.002)	ND
FF-2 (1-3)	ND(0.005)	ND(0.1)	0.014	ND(0.002)	ND
FF-2 (18-20)	ND(0.005)	ND(0.1)	0.0254	ND(0.002)	ND
FF-3 (1-3)	ND(0.005)	ND(0.1)	0.1550	ND(0.002)	ND
FF-3 (18-20)	ND(0.005)	ND(0.1)	0.013	ND(0.002)	ND
<u>Truck Station 10</u>					
10-1 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
CD-1 (1-3)	ND(0.005)	ND(0.1)	0.0292	ND(0.002)	ND
10-1 (18-20)	ND(0.005)	ND(0.1)	0.015	ND(0.002)	ND
10-2 (1-3)	ND(0.005)	ND(0.1)	0.023	ND(0.002)	ND
CD-2 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
10-2 (18-20)	ND(0.005)	ND(0.1)	0.01	ND(0.002)	ND
<u>Former Tank Farm D/Truck Station No. 3</u>					
D-1 (1-3)	ND(0.005)	ND(0.1)	0.011	ND(0.002)	ND
D-1 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
D-2 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
D-2 (18-20)	ND(0.005)	ND(0.1)	0.0254	ND(0.002)	ND
D-3 (4-6)	ND(0.002)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
D-3 (18-20)	ND(0.002)	ND(0.1)	0.010	ND(0.002)	ND

Table F-4-7. Soil Quality Data, TCLP Metals, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	All Others
<u>West Tank Farm/Driveway to Facility/Process Building</u>					
W-1 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-1 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-2 (4-6)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
CD-5 (4-6)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-2 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-3 (4-6)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-3 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
CD-4 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-4 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-4 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-5 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
CD-3 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-5 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-6 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-6 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-7 (3.5-5.5)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
W-7 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
PB-1 (0.5-2.5)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
PB-2 (0.5-2.5)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
<u>Truck Station No. 5/North Warehouse Pad</u>					
5-1 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
5-1 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
5-2 (1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
5-2 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
5-3 (4-6)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
5-3 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
6-1(1-3)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
6-1 (18-20)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND

1 Numbers in parentheses indicate sample depths in feet below ground surface.

Note: Qualified data in italics. Selenium data qualified for EF-3(1-3) and D-1(1-3). All Silver data qualified.

Table F-4-8. Soil Quality Data, TCLP Metals, Phase I RFI, Barker Chemical No. 2 Site, Dolton, Illinois.

Samples ¹	Cadmium ² (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	All Others
BC-1	0.0541	ND(0.1)	0.0086	ND(0.002)	ND
BC-2	0.00754	ND(0.1)	ND(0.0075)	ND(0.002)	ND
BC-2 (1-2)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
BC-3 (1-2)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
BC-4 (1-2)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
BC-5 (1-2)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
BC-2A (1-2)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
BC-6 (1-2)	0.067	ND(0.1)	0.0098	ND(0.002)	ND
BC-7 (1-2)	0.0869	ND(0.1)	0.0528	ND(0.002)	ND
BC-8 (1-2)	0.1	ND(0.1)	0.282	ND(0.002)	ND
BC-9 (1-2)	0.04	ND(0.1)	0.0572	ND(0.002)	ND
BC-10 (1-2)	0.015	ND(0.1)	ND(0.0075)	ND(0.002)	ND
BC-11 (1-2)	0.19	ND(0.1)	0.070	ND(0.002)	ND
BC-12 (1-2)	ND(0.005)	ND(0.1)	ND(0.0075)	ND(0.002)	ND
<u>Drum Content Samples</u>					
BC-D1	0.014	ND(0.1)	0.139	ND(0.002)	ND
BC-D2	0.029	0.3675	1.06	ND(0.002)	ND

¹ Sampling depths in parentheses given in feet below ground surface.

Note: Qualified data shown in italics. In addition, all Silver analyses were qualified.

APPENDIX G

GROUND-WATER QUALITY LABORATORY DATA REPORTS AND CHAIN-OF-CUSTODY/ SAMPLE-ANALYSIS-REQUEST FORMS

- G-1 GROUND-WATER ANALYTICAL DATA REPORTS
- G-2 GROUND-WATER QA/QC DATA REPORTS
- G-3 CHAIN-OF-CUSTODY/SAMPLE-ANALYSIS REQUEST FORMS
- G-4 GROUND-WATER QUALITY DATA SUMMARY TABLES

APPENDIX G-1

GROUND-WATER ANALYTICAL DATA REPORTS

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles Page 1 of 10

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #	71	72	73	74	75	76
Collector's Sample #	EF-4	FF-3	FF-2	D-3	FF-1	CD-7
Date Sampled	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94
Date Analyzed	10/1/94	10/1/94	10/1/94	10/1/94	10/1/94	10/1/94
Analyte	Report Limit mg/L	Concentration mg/L				
Acetone	0.1	<0.1	<0.1	1.2	<0.1	<0.1
Benzene	0.005	<0.005	<0.005	0.043	<0.005	<0.005
Bromodichloromethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromoform	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromomethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlorobenzene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroethane	0.01	<0.01	0.024	<0.01	<0.01	0.026
Chloroform	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloromethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibromochloromethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	0.005	<0.005	0.065	<0.005	<0.005	0.059
1,2-Dichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.005	<0.005	<0.005	0.017	<0.005	<0.005
cis-1,2-Dichloroethene	0.005	<0.005	<0.005	4.6	<0.005	<0.005
trans-1,2-Dichloroethylene	0.005	<0.005	<0.005	0.08	<0.005	<0.005
1,2-Dichloropropane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,3-Dichloropropene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans-1,3-Dichloropropene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Styrene	0.005	<0.005	<0.005	0.62	<0.005	<0.005

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #	71	72	73	74	75	76
Collector's Sample #	EF-4	FF-3	FF-2	D-3	FF-1	CD-7
Date Sampled	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94
Date Analyzed	10/1/94	10/1/94	10/1/94	10/1/94	10/1/94	10/1/94
Analyte	Report Limit mg/l	Concentration mg/l				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Butanone (MEK)	0.1	<0.1	<0.1	0.57	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	2.3	0.1	<0.05
Styrene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tetrachloroethene (PERC)	0.005	<0.005	<0.005	0.023	<0.005	<0.005
Toluene	0.005	<0.005	0.0063	12	0.068	0.083
1,1,1-Trichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	0.005	<0.005	<0.005	2.6	<0.005	<0.005
Trichlorofluoromethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.01	<0.01	4.3	<0.01	<0.01
Xylenes(Total)	0.005	<0.005	<0.005	2.2	<0.005	<0.005

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/28/95

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #		77	78	79	80	81	82
Collector's Sample #		EB-1	FB-1	EF-1	D-1	D-2	CD-8
Date Sampled		9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed		10/1/94	10/1/94	10/1/94	10/1/94	10/3/94	10/3/94
Analyte	Report Limit mg/L	Concentration mg/L					
Acetone	0.1	<0.1	<0.1	0.45	3.6	<0.1	<0.1
Benzene	0.005	<0.005	<0.005	0.092	0.048	<0.005	<0.005
Bromodichloromethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromoform	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromomethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlorobenzene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroethane	0.01	<0.01	<0.01	0.98	2.1	<0.01	<0.01
Chloroform	0.005	<0.005	<0.005	0.012	<0.005	<0.005	<0.005
Chloromethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibromochloromethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	0.005	<0.005	<0.005	1.9	0.78	<0.005	0.039
1,2-Dichloroethane	0.005	<0.005	<0.005	0.22	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.005	<0.005	<0.005	0.041	<0.005	<0.005	<0.005
cis-1,2-Dichloroethene	0.005	<0.005	<0.005	2.1	<0.005	<0.005	<0.005
trans-1,2-Dichloroethylene	0.005	<0.005	<0.005	0.016	<0.005	<0.005	<0.005
1,2-Dichloropropane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,3-Dichloropropene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans-1,3-Dichloropropene	0.005	<0.005	<0.005	<0.005	0.02	<0.005	<0.005
Ethylbenzene	0.005	<0.005	<0.005	0.56	0.08	<0.005	<0.005

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #	77	78	79	80	81	82
Collector's Sample #	EB-1	FB-1	EF-1	D-1	D-2	CD-8
Date Sampled	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Analyzed	10/1/94	10/1/94	10/1/94	10/1/94	10/3/94	10/3/94
Analyte	Report Limit mg/L	Concentration mg/L				
2-Hexanone	0.05	<0.05	<0.05	0.074	<0.05	<0.05
Methylene Chloride	0.005	<0.005	<0.005	0.027	0.088	<0.005
2-Butanone (MEK)	0.1	<0.1	<0.1	0.8	1.5	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	1.3	1.3	<0.05
Styrene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tetrachloroethene (PERC)	0.005	<0.005	<0.005	0.78	<0.005	<0.005
Toluene	0.005	<0.005	<0.005	2.6	1.1	0.02
1,1,1-Trichloroethane	0.005	<0.005	<0.005	5.200	0.190	<0.005
1,1,2-Trichloroethane	0.005	<0.005	<0.005	0.17	<0.005	<0.005
Trichloroethylene	0.005	<0.005	<0.005	2.1	<0.005	<0.005
Trichlorofluoromethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.01	<0.01	0.033	<0.01	<0.01
Xylenes(Total)	0.005	<0.005	<0.005	2.6	0.084	<0.005

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #	83	84	85	86	87	88
Collector's Sample #	W-2	W-3	5-3	W-4	EF-3	5-1
Date Sampled	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	9/21/94
Date Analyzed	10/3/94	10/3/94	10/3/94	10/4/94	10/4/94	10/3/94
Analyte	Report Limit mg/L	Concentration mg/L				
Acetone	0.1	0.18	<0.1	<0.1	<0.1	<0.1
Benzene	0.005	0.029	<0.005	<0.005	<0.005	<0.005
Bromodichloromethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromoform	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromomethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlorobenzene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroform	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloromethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibromochloromethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	0.005	0.081	<0.005	<0.005	0.035	<0.005
1,2-Dichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.005	0.059	<0.005	<0.005	<0.005	<0.005
cis-1,2-Dichloroethene	0.005	6.5	<0.005	<0.005	<0.005	<0.005
trans-1,2-Dichloroethylene	0.005	0.09	<0.005	<0.005	<0.005	<0.005
1,2-Dichloropropane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,3-Dichloropropene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans-1,3-Dichloropropene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	0.005	0.0051	<0.005	<0.005	<0.005	<0.005

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #	83	84	85	86	87	88
Collector's Sample #	W-2	W-3	5-3	W-4	EF-3	5-1
Date Sampled	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	9/21/94
Date Analyzed	10/3/94	10/3/94	10/3/94	10/4/94	10/4/94	10/3/94
Analyte	Report Limit mg/L	Concentration mg/L				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.005	<0.005	<0.005	0.0071	0.0064
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	0.1	<0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tetrachloroethene (PERC)	0.005	2.5	<0.005	<0.005	<0.005	<0.005
Toluene	0.005	0.11	<0.005	0.0051	0.016	0.011
1,1,1-Trichloroethane	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
1,1,2-Trichloroethane	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Trichloroethylene	0.005	0.59	<0.005	<0.005	<0.005	<0.005
Trichlorofluoromethane	0.01	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,2-Trichlorotrifluoroethane	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	3.7	<0.01	<0.01	<0.01	<0.01
Xylenes(Total)	0.005	0.026	<0.005	<0.005	<0.005	<0.005

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #		89	90	91	92	93	94
Collector's Sample #		5-2	6-1	W-1	W-5	W-6	10-1
Date Sampled		9/21/94	9/21/94	9/21/94	9/21/94	9/20/94	9/21/94
Date Analyzed		10/3/94	10/3/94	10/3/94	10/4/94	10/4/94	10/4/94
Analyte	Report Limit mg/L	Concentration mg/L					
Acetone	0.1	<0.1	<0.1	0.72	2.2	<0.1	<0.1
Benzene	0.005	<0.005	0.026	0.36	0.11	<0.005	0.026
Bromodichloromethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromoform	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromomethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Disulfide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlorobenzene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroethane	0.01	<0.01	<0.01	1.5	<0.01	0.017	0.011
Chloroform	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloromethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibromochloromethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	0.005	<0.005	<0.005	1.3	0.8	<0.005	<0.005
1,2-Dichloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.005	<0.005	<0.005	0.011	<0.005	<0.005	<0.005
cis-1,2-Dichloroethene	0.005	<0.005	<0.005	0.32	<0.005	<0.005	0.022
trans-1,2-Dichloroethylene	0.005	<0.005	<0.005	0.0069	0.024	<0.005	<0.005
1,2-Dichloropropane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,3-Dichloropropene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans-1,3-Dichloropropene	0.005	<0.005	<0.005	0.09	<0.005	<0.005	<0.005
Ethylbenzene	0.005	<0.005	<0.005	1.2	<0.005	0.011	0.077

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #	89	90	91	92	93	94
Collector's Sample #	5-2	6-1	W-1	W-5	W-6	10-1
Date Sampled	9/21/94	9/21/94	9/21/94	9/21/94	9/20/94	9/21/94
Date Analyzed	10/3/94	10/3/94	10/3/94	10/4/94	10/4/94	10/4/94
Analyte	Report Limit mg/L	Concentration mg/L				
2-Hexanone	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.005	<0.005	0.43	0.81	<0.005
2-Butanone (MEK)	0.1	<0.1	<0.1	0.34	3.2	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	0.68	3.8	<0.05
Styrene	0.005	<0.005	<0.005	0.026	<0.005	<0.005
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tetrachloroethene (PERC)	0.005	<0.005	<0.005	0.025	<0.005	<0.005
Toluene	0.005	<0.005	0.011	4.6	0.23	0.0058
1,1,1-Trichloroethane	0.005	<0.0050	<0.0050	2.000	0.049	<0.0050
1,1,2-Trichloroethane	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Trichloroethylene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorofluoromethane	0.01	<0.010	<0.010	<0.010	<0.010	<0.010
1,1,2-Trichlorotrifluoroethane	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Vinyl Acetate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.01	<0.01	0.032	0.19	<0.01
Xylenes(Total)	0.005	<0.005	<0.005	2.8	<0.005	0.0063

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #		95	96	97
Collector's Sample #		EB-2	FB-2	W-7
Date Sampled		9/21/94	9/21/94	9/21/94
Date Analyzed		10/4/94	10/4/94	10/4/94
Analyte	Report Limit mg/L	Concentration mg/L		
Acetone	0.1	<0.1	<0.1	<0.1
Benzene	0.005	<0.005	<0.005	<0.005
Bromodichloromethane	0.005	<0.005	<0.005	<0.005
Bromoform	0.005	<0.005	<0.005	<0.005
Bromomethane	0.01	<0.01	<0.01	<0.01
Carbon Disulfide	0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	0.005	<0.005	<0.005	<0.005
Chlorobenzene	0.005	<0.005	<0.005	<0.005
Chloroethane	0.01	<0.01	<0.01	<0.01
Chloroform	0.005	<0.005	<0.005	<0.005
Chloromethane	0.01	<0.01	<0.01	<0.01
Dibromochloromethane	0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	0.005	<0.005	<0.005	0.015
1,2-Dichloroethane	0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.005	<0.005	<0.005	<0.005
cis-1,2-Dichloroethene	0.005	<0.005	<0.005	<0.005
trans-1,2-Dichloroethylene	0.005	<0.005	<0.005	<0.005
1,2-Dichloropropane	0.005	<0.005	<0.005	<0.005
cis-1,3-Dichloropropene	0.005	<0.005	<0.005	<0.005
trans-1,3-Dichloropropene	0.005	<0.005	<0.005	<0.005
Ethylbenzene	0.005	<0.005	<0.005	<0.005

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240

Work Order #		95	96	97
Collector's Sample #		EB-2	FB-2	W-7
Date Sampled		9/21/94	9/21/94	9/21/94
Date Analyzed		10/4/94	10/4/94	10/4/94
Analyte	Report Limit mg/L	Concentration mg/L		
2-Hexanone	0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.005	<0.005	<0.005	0.0078
2-Butanone (MEK)	0.1	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	0.05	<0.05	<0.05	<0.05
Styrene	0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	0.005	<0.005	<0.005	<0.005
Tetrachloroethene (PERC)	0.005	<0.005	<0.005	<0.005
Toluene	0.005	0.059	0.011	0.06
1,1,1-Trichloroethane	0.005	<0.0050	<0.0050	<0.0050
1,1,2-Trichloroethane	0.005	<0.0050	<0.0050	<0.0050
Trichloroethylene	0.005	<0.005	<0.005	<0.005
Trichlorofluoromethane	0.01	<0.010	<0.010	<0.010
1,1,2-Trichlorotrifluoroethane	0.005	<0.0050	<0.0050	<0.0050
Vinyl Acetate	0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.01	<0.01	<0.01	<0.01
Xylenes(Total)	0.005	<0.005	<0.005	<0.005

Analytical Review / Date:

[Signature] 2/17/95

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 1 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	71	72	73	74	75	76
Collector's Sample #	EF-4	FF-3	FF-2	D-3	FF-1	CD-7
Date Sampled	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94
Date Extracted	9/21/94	9/21/94	9/21/94	9/21/94	9/21/94	9/21/94
Date Analyzed	9/29/94	9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Phenol	0.004	<0.004	<0.004	<0.004	<0.004	<0.004
2-Chlorophenol	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,3-Dichlorobenzene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,4-Dichlorobenzene	0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2,5-Dichlorobenzene	0.009	<0.009	<0.009	0.016	<0.009	<0.009
Benzyl Alcohol	0.006	<0.006	<0.006	<0.006	<0.006	<0.006
2-Methylphenol	0.008	<0.008	<0.008	0.130	<0.008	<0.008
Hexachloroethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Methylphenol	0.006	<0.006	<0.006	0.150	<0.006	<0.006
Nitrobenzene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
2-Nitrophenol	0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Isophorone	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dimethylphenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
bis(2-Chloroethoxy)Methane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dichlorophenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2,4-Trichlorobenzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Naphthalene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Chloro-3-Methylphenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Methylnaphthalene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

ANALYTICAL RESULTS
Semi-Volatile Organics in Water
 EPA Method 8270

Work Order #	71	72	73	74	75	76
Collector's Sample #	EF-4	FF-3	FF-2	D-3	FF-1	CD-7
Date Sampled	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94
Date Extracted	9/21/94	9/21/94	9/21/94	9/21/94	9/21/94	9/21/94
Date Analyzed	9/29/94	9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Hexachlorocyclopentadiene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,6-Trichlorophenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,5-Trichlorophenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Chloronaphthalene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Nitroaniline	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dimethylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	0.009	<0.009	<0.009	<0.009	<0.009	<0.009
4-Nitroaniline	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Acenaphthene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dinitrophenol	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzofuran	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
4-Nitrophenol	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dinitrotoluene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Diethylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Chlorophenyl-phenylether	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
2-Methyl-4,6-Dinitrophenol	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4-Bromophenyl-phenylether	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobenzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pentachlorophenol	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles Page 3 of 12

ANALYTICAL RESULTS
Semi-Volatile Organics in Water
 EPA Method 8270

Work Order #	71	72	73	74	75	76
Collector's Sample #	EF-4	FF-3	FF-2	D-3	FF-1	CD-7
Date Sampled	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94	9/19/94
Date Extracted	9/21/94	9/21/94	9/21/94	9/21/94	9/21/94	9/21/94
Date Analyzed	9/29/94	9/29/94	9/29/94	9/29/94	9/29/94	9/29/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Phenanthrene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Di-n-butylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoranthene	0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Pyrene	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Butylbenzylphthalate	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,3'-Dichlorobenzidine	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)anthracene	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chrysene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
bis(2-Ethylhexyl)phthalate	0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Di-n-octylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Benzo(k)fluoranthene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Benzo(a)pyrene	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Indeno(1,2,3-cd)pyrene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenz(a,h)anthracene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2,6-Dinitrotoluene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
4-Chloroaniline	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3-Nitroaniline	0.007	<0.007	<0.007	<0.007	<0.007	<0.007

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles Page 4 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	77	78	80	81	82	83
Collector's Sample #	EB-1	FB-1	D-1	D-2	CD-8	W-2
Date Sampled	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Extracted	9/21/94	9/21/94	9/22/94	9/22/94	9/22/94	9/22/94
Date Analyzed	9/29/94	9/30/94	9/30/94	9/30/94	9/30/94	9/29/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Phenol	0.004	<0.004	<0.004	<0.004	<0.004	<0.004
2-Chlorophenol	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,3-Dichlorobenzene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,4-Dichlorobenzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Benzyl Alcohol	0.006	<0.006	<0.006	<0.006	<0.006	<0.006
2-Methylphenol	0.008	<0.008	<0.008	0.190	<0.008	<0.008
0.013						
Hexachloroethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Methylphenol	0.006	<0.006	<0.006	0.100	<0.006	<0.006
Nitrobenzene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
2-Nitrophenol	0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Isophorone	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dimethylphenol	0.01	<0.01	<0.01	0.056	<0.01	<0.01
bis(2-Chloroethoxy)Methane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dichlorophenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2,4-Trichlorobenzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Naphthalene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Chloro-3-Methylphenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Methylnaphthalene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 5 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	77	78	80	81	82	83
Collector's Sample #	EB-1	FB-1	D-1	D-2	CD-8	W-2
Date Sampled	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Extracted	9/21/94	9/21/94	9/22/94	9/22/94	9/22/94	9/22/94
Date Analyzed	9/29/94	9/30/94	9/30/94	9/30/94	9/30/94	9/29/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Hexachlorocyclopentadiene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,6-Trichlorophenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,5-Trichlorophenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Chloronaphthalene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Nitroaniline	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dimethylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	0.009	<0.009	<0.009	<0.009	<0.009	<0.009
4-Nitroaniline	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Acenaphthene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dinitrophenol	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzofuran	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
4-Nitrophenol	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dinitrotoluene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Diethylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Chlorophenyl-phenylether	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
2-Methyl-4,6-Dinitrophenol	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4-Bromophenyl-phenylether	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobenzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pentachlorophenol	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles

Page 6 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	77	78	80	81	82	83
Collector's Sample #	EB-1	FB-1	D-1	D-2	CD-8	W-2
Date Sampled	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94	9/20/94
Date Extracted	9/21/94	9/21/94	9/22/94	9/22/94	9/22/94	9/22/94
Date Analyzed	9/29/94	9/30/94	9/30/94	9/30/94	9/30/94	9/29/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Phenanthrene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Di-n-butylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoranthene	0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Pyrene	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Butylbenzylphthalate	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,3'-Dichlorobenzidine	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)anthracene	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chrysene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
bis(2-Ethylhexyl)phthalate	0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Di-n-octylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Benzo(k)fluoranthene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Benzo(a)pyrene	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Indeno(1,2,3-cd)pyrene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenz(a,h)anthracene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2,6-Dinitrotoluene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
4-Chloroaniline	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3-Nitroaniline	0.007	<0.007	<0.007	<0.007	<0.007	<0.007

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles Page 7 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	84	85	86	87	88	90
Collector's Sample #	W-3	5-3	W-4	EF-3	5-1	6-1
Date Sampled	9/20/94	9/20/94	9/20/94	9/20/94	9/21/94	9/21/94
Date Extracted	9/22/94	9/22/94	9/22/94	9/22/94	9/23/94	9/23/94
Date Analyzed	9/30/94	9/29/94	9/30/94	9/30/94	10/3/94	10/3/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Phenol	0.004	<0.004	<0.004	<0.004	<0.004	<0.004
2-Chlorophenol	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,3-Dichlorobenzene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,4-Dichlorobenzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Benzyl Alcohol	0.006	<0.006	<0.006	<0.006	<0.006	<0.006
2-Methylphenol	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Hexachloroethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Methylphenol	0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Nitrobenzene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
2-Nitrophenol	0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Isophorone	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dimethylphenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
bis(2-Chloroethoxy)Methane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dichlorophenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2,4-Trichlorobenzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Naphthalene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Chloro-3-Methylphenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Methylnaphthalene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles Page 8 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	84	85	86	87	88	90
Collector's Sample #	W-3	5-3	W-4	EF-3	5-1	6-1
Date Sampled	9/20/94	9/20/94	9/20/94	9/20/94	9/21/94	9/21/94
Date Extracted	9/22/94	9/22/94	9/22/94	9/22/94	9/23/94	9/23/94
Date Analyzed	9/30/94	9/29/94	9/30/94	9/30/94	10/3/94	10/3/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Hexachlorocyclopentadiene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,6-Trichlorophenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,5-Trichlorophenol	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Chloronaphthalene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Nitroaniline	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dimethylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	0.009	<0.009	<0.009	<0.009	<0.009	<0.009
4-Nitroaniline	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Acenaphthene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dinitrophenol	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzofuran	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
4-Nitrophenol	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dinitrotoluene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Diethylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Chlorophenyl-phenylether	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
2-Methyl-4,6-Dinitrophenol	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4-Bromophenyl-phenylether	0.01	<0.01	<0.01	<0.01	<0.01	<0.014
Hexachlorobenzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.011
Pentachlorophenol	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles Page 9 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	84	85	86	87	88	90
Collector's Sample #	W-3	5-3	W-4	EF-3	5-1	6-1
Date Sampled	9/20/94	9/20/94	9/20/94	9/20/94	9/21/94	9/21/94
Date Extracted	9/22/94	9/22/94	9/22/94	9/22/94	9/23/94	9/23/94
Date Analyzed	9/30/94	9/29/94	9/30/94	9/30/94	10/3/94	10/3/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Phenanthrene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Di-n-butylphthalate	0.01	<0.01	<0.01	<0.01	<0.01	0.018
Fluoranthene	0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Pyrene	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
n-Butylbenzylphthalate	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,3'-Dichlorobenzidine	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)anthracene	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chrysene	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
bis(2-Ethylhexyl)phthalate	0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Di-n-octylphthalate	0.010	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Benzo(k)fluoranthene	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Benzo(a)pyrene	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Indeno(1,2,3-cd)pyrene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenz(a,h)anthracene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2,6-Dinitrotoluene	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
4-Chloroaniline	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3-Nitroaniline	0.007	<0.007	<0.007	<0.007	<0.007	<0.007

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles Page 10 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	91	92	93	94	95	96
Collector's Sample #	W-1	W-5	W-6	10-1	EB-2	FB-2
Date Sampled	9/21/94	9/21/94	9/20/94	9/21/94	9/21/94	9/21/94
Date Extracted	9/23/94	9/23/94	9/23/94	9/23/94	9/23/94	9/23/94
Date Analyzed	10/3/94	9/29/94	10/5/94	10/5/94	9/29/94	9/29/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Phenol	0.004	<0.004	0.012	<0.013	<0.004	<0.004
2-Chlorophenol	0.008	<0.008	<0.008	<0.024	<0.008	<0.008
1,3-Dichlorobenzene	0.008	<0.008	<0.008	<0.024	<0.008	<0.008
1,4-Dichlorobenzene	0.010	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	0.009	<0.009	<0.009	<0.026	<0.009	<0.009
Benzyl Alcohol	0.006	<0.006	<0.006	<0.019	<0.006	<0.006
2-Methylphenol	0.008	0.280	0.038	<0.024	0.39	<0.008
Hexachloroethane	0.01	<0.01	<0.01	<0.034	<0.01	<0.01
4-Methylphenol	0.006	0.230	0.058	<0.018	0.10	<0.006
Nitrobenzene	0.008	<0.008	<0.008	<0.024	<0.008	<0.008
2-Nitrophenol	0.009	<0.009	<0.009	<0.027	<0.009	<0.009
Isophorone	0.01	<0.01	<0.01	<0.031	<0.01	<0.01
2,4-Dimethylphenol	0.01	<0.01	<0.01	<0.057	<0.01	<0.01
bis(2-Chloroethoxy)Methane	0.01	<0.01	<0.01	<0.046	<0.01	<0.01
2,4-Dichlorophenol	0.01	<0.01	<0.01	<0.090	<0.01	<0.01
1,2,4-Trichlorobenzene	0.01	<0.01	<0.01	<0.076	<0.01	<0.01
Naphthalene	0.01	<0.01	<0.01	<0.050	<0.01	<0.01
Hexachlorobutadiene	0.01	<0.01	<0.01	<0.076	<0.01	<0.01
4-Chloro-3-Methylphenol	0.01	<0.01	<0.01	<0.085	<0.01	<0.01
2-Methylnaphthalene	0.01	<0.01	<0.01	<0.035	<0.01	<0.01

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles Page 11 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	91	92	93	94	95	96
Collector's Sample #	W-1	W-5	W-6	10-1	EB-2	FB-2
Date Sampled	9/21/94	9/21/94	9/20/94	9/21/94	9/21/94	9/21/94
Date Extracted	9/23/94	9/23/94	9/23/94	9/23/94	9/23/94	9/23/94
Date Analyzed	10/3/94	9/29/94	10/5/94	10/5/94	9/29/94	9/29/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Hexachlorocyclopentadiene	0.01	<0.01	<0.01	<0.066	<0.01	<0.01
2,4,6-Trichlorophenol	0.01	<0.01	<0.01	<0.110	<0.01	<0.01
2,4,5-Trichlorophenol	0.01	<0.01	<0.01	<0.032	<0.01	<0.01
2-Chloronaphthalene	0.01	<0.01	<0.01	<0.065	<0.01	<0.01
Nitroaniline	0.005	<0.005	<0.005	<0.014	<0.005	<0.005
Dimethylphthalate	0.01	<0.01	<0.01	<0.038	<0.01	<0.01
Acenaphthylene	0.009	<0.009	<0.009	<0.028	<0.009	<0.009
4-Nitroaniline	0.007	<0.007	<0.007	<0.022	<0.007	<0.007
Acenaphthene	0.01	<0.01	<0.01	<0.029	<0.01	<0.01
2,4-Dinitrophenol	0.05	<0.05	<0.05	<0.329	<0.05	<0.05
Dibenzofuran	0.007	<0.007	<0.007	<0.023	<0.007	<0.007
4-Nitrophenol	0.005	<0.005	<0.005	<0.017	<0.005	<0.005
2,4-Dinitrotoluene	0.01	<0.01	<0.01	<0.033	<0.01	<0.01
Diethylphthalate	0.01	<0.01	<0.01	<0.030	<0.01	<0.01
4-Chlorophenyl-phenylether	0.01	<0.01	<0.01	<0.035	<0.01	<0.01
Fluorene	0.007	<0.007	<0.007	<0.023	<0.007	<0.007
2-Methyl-4,6-Dinitrophenol	0.02	<0.02	<0.02	<0.187	<0.02	<0.02
4-Bromophenyl-phenylether	0.01	<0.01	<0.01	<0.043	<0.01	<0.01
Hexachlorobenzene	0.01	<0.01	<0.01	<0.034	<0.01	<0.01
Pentachlorophenol	0.05	<0.05	<0.05	<0.269	<0.05	<0.05

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles Page 12 of 12

ANALYTICAL RESULTS

Semi-Volatile Organics in Water

EPA Method 8270

Work Order #	91	92	93	94	95	96
Collector's Sample #	W-1	W-5	W-6	10-1	EB-2	FB-2
Date Sampled	9/21/94	9/21/94	9/20/94	9/21/94	9/21/94	9/21/94
Date Extracted	9/23/94	9/23/94	9/23/94	9/23/94	9/23/94	9/23/94
Date Analyzed	10/3/94	9/29/94	10/5/94	10/5/94	9/29/94	9/29/94
Analyte	Reporting Limit mg/L	Concentration mg/L				
Phenanthrene	0.005	<0.005	<0.005	<0.016	<0.005	<0.005
Anthracene	0.005	<0.005	<0.005	<0.015	<0.005	<0.005
Di-n-butylphthalate	0.01	0.390	0.110	<0.035	<0.01	0.028
Fluoranthene	0.004	<0.004	<0.004	<0.014	<0.004	<0.004
Pyrene	0.003	<0.003	<0.003	<0.009	<0.003	<0.003
Butylbenzylphthalate	0.005	0.084	0.007	0.015	<0.005	<0.005
3,3'-Dichlorobenzidine	0.002	<0.002	<0.002	<0.01	<0.002	<0.002
Benzo(a)anthracene	0.003	<0.003	<0.003	<0.009	<0.003	<0.003
Chrysene	0.005	<0.005	<0.005	<0.014	<0.005	<0.005
bis(2-Ethylhexyl)phthalate	0.006	<0.006	<0.006	<0.017	<0.006	<0.006
Di-n-octylphthalate	0.01	<0.01	<0.01	<0.050	<0.01	<0.01
Benzo(b)fluoranthene	0.008	<0.008	<0.008	<0.024	<0.008	<0.008
Benzo(k)fluoranthene	0.008	<0.008	<0.008	<0.025	<0.008	<0.008
Benzo(a)pyrene	0.002	<0.002	<0.002	<0.006	<0.002	<0.002
Indeno(1,2,3-cd)pyrene	0.001	<0.001	<0.001	<0.003	<0.001	<0.001
Dibenz(a,h)anthracene	0.001	<0.001	<0.001	<0.003	<0.001	<0.001
Benzo(g,h,i)perylene	0.001	<0.001	<0.001	<0.003	<0.001	<0.001
2,6-Dinitrotoluene	0.001	<0.001	<0.001	<0.003	<0.001	<0.001
4-Chloroaniline	0.005	<0.005	<0.005	<0.016	<0.005	<0.005
3-Nitroaniline	0.007	<0.007	<0.007	<0.007	<0.007	<0.007

Analytical Review / Date:

[Signature] 2/17/95

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Dissolved Metals

Page 1 of 4

ANALYTICAL RESULTS

Dissolved Metals

Work Order #			71	72	73	74
Collector's Sample #			EF-4	FF-3	FF-2	D-3
Date Sampled			9/19/94	9/19/94	9/19/94	9/19/94
Date Analyzed (EPA Method 7060)			10/1/94	10/1/94	10/1/94	10/1/94
Date Analyzed (EPA Method 6010)			9/29/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 7131)			9/30/94	9/30/94	9/30/94	9/30/94
Date Analyzed (EPA Method 7421)			10/3/94	10/3/94	10/3/94	10/3/94
Date Analyzed (EPA Method 7470)			10/6/94	10/6/94	10/6/94	10/6/94
Date Analyzed (EPA Method 7740)			10/4/94	10/4/94	10/4/94	10/4/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L			
Arsenic	7060	0.025	<0.025	<0.025	<0.025	<0.025
Barium	6010	0.02	0.0284	0.0307	0.1198	0.0405
Cadmium	7131	0.0008	<0.0008	<0.0008	<0.0008	0.0026
Chromium	6010	0.04	<0.04	<0.04	<0.04	<0.04
Lead	7421	0.006	<0.006	<0.006	<0.006	<0.006
Mercury	7470	0.0008	<0.0008	<0.0008	<0.0008	0.0047
Selenium	7740	0.00903	<0.00903	<0.00903	<0.00903	<0.00903
Silver	6010	0.03	<0.030	<0.030	<0.030	<0.030

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Dissolved Metals

Page 2 of 4

ANALYTICAL RESULTS

Dissolved Metals

Work Order #			76	77	78	81
Collector's Sample #			CD-7	EB-1	FB-1	D-2
Date Sampled			9/19/94	9/20/94	9/20/94	9/20/94
Date Analyzed (EPA Method 7060)			10/1/94	10/4/94	10/4/94	10/4/94
Date Analyzed (EPA Method 6010)			9/29/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 7131)			9/30/94	10/5/94	10/5/94	10/5/94
Date Analyzed (EPA Method 7421)			10/3/94	10/5/94	10/5/94	10/5/94
Date Analyzed (EPA Method 7470)			10/6/94	10/6/94	10/6/94	10/6/94
Date Analyzed (EPA Method 7740)			10/4/94	10/4/94	10/4/94	10/4/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L			
Arsenic	7060	0.025	<0.025	<0.025	<0.025	<0.025
Barium	6010	0.02	0.0321	<0.02	<0.02	0.0215
Cadmium	7131	0.0008	<0.0008	<0.0008	<0.0008	0.00102
Chromium	6010	0.04	<0.04	<0.04	<0.04	<0.04
Lead	7421	0.006	<0.006	<0.006	<0.006	<0.006
Mercury	7470	0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Selenium	7740	0.00903	<0.00903	<0.00903	<0.00903	<0.00903
Silver	6010	0.03	<0.030	<0.030	<0.030	<0.030

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Dissolved Metals

Page 3 of 4

ANALYTICAL RESULTS

Dissolved Metals

Work Order #			82	84	86	90
Collector's Sample #			CD-8	W-3	W-4	6-1
Date Sampled			9/20/94	9/20/94	9/20/94	9/21/94
Date Analyzed (EPA Method 7060)			10/4/94	10/4/94	10/4/94	10/4/94
Date Analyzed (EPA Method 6010)			9/29/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 7131)			10/5/94	10/5/94	10/5/94	10/5/94
Date Analyzed (EPA Method 7421)			10/5/94	10/5/94	10/5/94	10/5/94
Date Analyzed (EPA Method 7470)			10/6/94	10/6/94	10/6/94	10/6/94
Date Analyzed (EPA Method 7740)			10/7/94	10/4/94	10/4/94	10/4/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L			
Arsenic	7060	0.025	<0.025	<0.025	<0.025	<0.025
Barium	6010	0.02	0.0607	0.0598	0.0605	0.1384
Cadmium	7131	0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Chromium	6010	0.04	<0.04	<0.04	<0.04	<0.04
Lead	7421	0.006	<0.006	<0.006	<0.006	<0.006
Mercury	7470	0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Selenium	7740	0.00903	<0.00903	<0.00903	<0.00903	<0.00903
Silver	6010	0.03	<0.03	<0.03	<0.03	<0.03

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Dissolved Metals

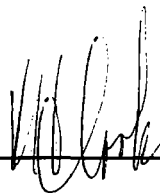
Page 4 of 4

ANALYTICAL RESULTS

Dissolved Metals

Work Order #			92	94	95	96
Collector's Sample #			W-5	10-1	EB-2	FB-2
Date Sampled			9/21/94	9/21/94	9/21/94	9/21/94
Date Analyzed (EPA Method 7060)			10/4/94	10/4/94	10/4/94	10/4/94
Date Analyzed (EPA Method 6010)			9/29/94	9/29/94	9/29/94	9/29/94
Date Analyzed (EPA Method 7131)			10/5/94	10/5/94	10/5/94	10/5/94
Date Analyzed (EPA Method 7421)			10/5/94	10/5/94	10/5/94	10/5/94
Date Analyzed (EPA Method 7470)			10/6/94	10/6/94	10/6/94	10/6/94
Date Analyzed (EPA Method 7740)			10/4/94	10/4/94	10/4/94	10/4/94
Analyte	EPA Method	Reporting Limit mg/L	Concentration mg/L			
Arsenic	7060	0.025	<0.025	<0.025	<0.025	<0.025
Barium	6010	0.02	0.2239	0.0514	<0.02	<0.02
Cadmium	7131	0.0008	<0.0008	0.0018	<0.0008	<0.0008
Chromium	6010	0.04	<0.04	<0.04	<0.04	<0.04
Lead	7421	0.006	<0.006	<0.006	<0.006	<0.006
Mercury	7470	0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Selenium	7740	0.00903	<0.00903	<0.00903	<0.00903	<0.00903
Silver	6010	0.03	<0.03	<0.03	<0.03	<0.03

Analytical Review / Date:



2/17/95

APPENDIX G-2

GROUND-WATER QA/QC DATA REPORTS

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles QC Page 1 of 6

SURROGATE RECOVERY SUMMARY

Volatile Organics in Water

EPA Method 8240

Work Order #	Collector's Sample #	Percent Recovery			
		S1 (TOL)	S2 (BFB)	S3 (DCE)	TOTAL OUT
71	EF-4	101	98	104	0
72	FF-3	102	98	98	0
73	FF-2	*	102	110	1
74	D-3	98	105	88	0
75	FF-1	98	102	91	0
76	CD-7	100	103	92	0
77	EB-1	100	101	91	0
78	FB-1	103	97	93	0
79	EF-1	100	103	100	0
80	D-1	102	94	109	0
81	D-2	96	104	84	0
82	CD-8	96	103	84	0
83	W-2	96	102	87	0
84	W-3	95	104	82	0
85	5-3	94	105	86	0
86	W-4	101	97	106	0
87	EF-3	102	98	100	0
88	5-1	96	103	80	0
89	5-2	95	104	82	0

* Surrogate not recovered due to matrix interference.

Surrogates			Recovery Limits
S1	TOL	Toluene-d8	81 - 117
S2	BFB	Bromofluorobenzene	74 - 121
S3	DCE	1,2-Dichloroethane-d4	70 - 121

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Volatiles QC Page 2 of 6

SURROGATE RECOVERY SUMMARY

Volatile Organics in Water

EPA Method 8240

Work Order #	Collector's Sample #	Percent Recovery			
		S1 (TOL)	S2 (BFB)	S3 (DCE)	TOTAL OUT
90	6-1	96	103	82	0
91	W-1	60	111	83	1
92	W-5	100	99	105	0
93	W-6	100	98	96	0
94	10-1	98	102	105	0
95	EB-2	96	99	102	0
96	FB-2	99	98	105	0
97	W-7	102	96	105	0

<u>Surrogates</u>			<u>Recovery Limits</u>
S1	TOL	Toluene-d8	81 - 117
S2	BFB	Bromofluorobenzene	74 - 121
S3	DCE	1,2-Dichloroethane-d4	70 - 121

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles QC

Page 3 of 6

METHOD BLANK SUMMARY

Volatile Organics in Water

EPA Method 8240

Lab Blank #	MTHBLANK	BLANK	BLANK
Date Analyzed	10/1/94	10/3/94	10/4/94
Analyte	Concentration mg/L		
Acetone	0.0112	<0.01	<0.01
Benzene	<0.005	<0.005	<0.005
Bromodichloromethane	<0.005	<0.005	<0.005
Bromoform	<0.005	<0.005	<0.005
Bromomethane	<0.01	<0.01	<0.01
Carbon Disulfide	<0.1	<0.1	<0.1
Carbon Tetrachloride	<0.005	<0.005	<0.005
Chlorobenzene	<0.005	<0.005	<0.005
Chloroethane	<0.01	<0.01	<0.01
Chloroform	<0.005	<0.005	<0.005
Chloromethane	<0.01	<0.01	<0.01
Dibromochloromethane	<0.005	<0.005	<0.005
1,1-Dichloroethane	<0.005	<0.005	<0.005
1,2-Dichloroethane	<0.005	<0.005	<0.005
1,1-Dichloroethene	<0.005	<0.005	<0.005
cis-1,2-Dichloroethene	<0.005	<0.005	<0.005
trans-1,2-Dichloroethylene	<0.005	<0.005	<0.005
1,2-Dichloropropane	<0.005	<0.005	<0.005
cis-1,3-Dichloropropene	<0.005	<0.005	<0.005
trans-1,3-Dichloropropene	<0.005	<0.005	<0.005
Ethylbenzene	<0.005	<0.005	<0.005

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Volatiles QC

Page 4 of 6

METHOD BLANK SUMMARY

Volatile Organics in Water

EPA Method 8240

Lab Blank #	MTHBLANK	BLANK	BLANK
Date Analyzed	10/1/94	10/3/94	10/4/94
Analyte	Concentration mg/L		
2-Hexanone	<0.05	<0.05	<0.05
Methylene Chloride	<0.005	<0.005	<0.005
2-Butanone (MEK)	<0.1	<0.1	<0.1
4-Methyl-2-Pentanone	<0.05	<0.05	<0.05
Styrene	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	<0.005	<0.005	<0.005
Tetrachloroethene (PERC)	<0.005	<0.005	<0.005
Toluene	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	<0.005	<0.005	<0.005
Trichloroethylene	<0.005	<0.005	<0.005
Trichlorofluoromethane	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane	<0.005	<0.005	<0.005
Vinyl Acetate	<0.05	<0.05	<0.05
Vinyl Chloride	<0.01	<0.01	<0.01
Xylenes(Total)	<0.005	<0.005	<0.005

Project ID #: 32-02

Volatiles QC

Page 5 of 6

Project ID Name: Dolton, IL

SK Lab Project #: 94-063

Date Reported: 2/17/95

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY**
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)

Volatile Organics in Water

EPA Method 8240

Work Order #: E94-063-72

Collector's Sample #: FF-3

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %	Acceptability Limits %	
								RPD	% Recovery
Benzene	50	<0.0050	51.8	51.6	104	103	0	20	76 - 127
Chlorobenzene	50	<0.0050	52.6	52.9	105	106	1	20	75 - 110
1,1-Dichloroethylene	50	<0.0050	50.4	51.5	101	103	2	20	61 - 145
Toluene	50	0.0063	58.7	58.6	117	117	0	20	76 - 125
Trichloroethylene	50	<0.0050	53.4	52.5	107	105	2	20	71 - 120

Work Order #: E94-063-94

Collector's Sample #: 10-1

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %	Acceptability Limits %	
								RPD	% Recovery
Benzene	50	0.026	71.8	67	144	134	7	20	76 - 127
Chlorobenzene	50	<0.005	47.2	39.2	94	78	19	20	75 - 110
1,1-Dichloroethylene	50	<0.005	48.4	42.3	97	85	13	20	61 - 145
Toluene	50	<0.005	1260	1180	2520	2360	7	20	76 - 125
Trichloroethylene	50	<0.005	46.5	39.8	93	80	16	20	71 - 120

Project ID #: 32-02

Volatiles QC

Page 6 of 6

Project ID Name: Dolton, IL

SK Lab Project #: 94-063

Date Reported: 2/17/95

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Volatile Organics in Water
EPA Method 8240**

Work Order #: DM94-09-003

Collector's Sample #: 396280

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %	Acceptability Limits %	
								RPD	% Recovery
Benzene	50	<0.005	50	52.2	100	104	4	20	76 - 127
Chlorobenzene	50	<0.005	50.3	52.3	101	105	4	20	75 - 110
1,1-Dichloroethylene	50	<0.005	44	45.2	88	90	3	20	61 - 145
Toluene	50	<0.005	53.5	58.2	107	116	8	20	76 - 125
Trichloroethylene	50	<0.005	52.9	55.9	106	112	6	20	71 - 120

Review / Date:



2/17/95

Project ID #: 32-02
 Project ID Name: Dolton, IL
 Lab Project #: 94-063
 Date Reported: 2/17/95

SURROGATE RECOVERY SUMMARY

Semi-Volatile Organics in Water

EPA Method 8270

4-Methylphenol

Work Order #	Collector's Sample #	Percent Recovery					
		S1 (PHL)	S2 (2FP)	S3 (NBD5)	S4 (2FBP)	S5 (246TBP)	TOTAL OUT
71	EF-4	25	43	70	56	79	0
72	FF-3	25	46	60	61	77	0
73	FF-2	28	48	65	63	107	0
74	D-3	30	55	65	64	118	0
75	FF-1	39	62	71	71	102	0
76	CD-7	30	51	64	67	101	0
77	EB-1	24	47	58	62	109	0
78	FB-1	30	59	59	72	102	0
80	D-1	43	72	61	66	103	0
81	D-2	25	46	50	53	81	0
82	CD-8	31	59	70	67	100	0
83	W-2	28	58	71	60	60	0
84	W-3	29	54	65	63	103	0
85	5-3	47	67	66	64	92	0
86	W-4	30	56	66	65	93	0
87	EF-3	36	64	57	66	94	0

Surrogates

S1	PHL	Phenol-d5
S2	2FP	2-Fluorophenol
S3	NBD5	Nitrobenzene-d5
S4	2FBP	2-Fluorobiphenyl
S5	246TBP	2,4,6-Tribromophenol

Recovery Limits

10 - 94
 21 - 100
 35 - 114
 43 - 116
 10 - 123

Project ID #: 32-02
 Project ID Name: Dolton, IL
 K Lab Project #: 94-063
 Date Reported: 2/17/95

SURROGATE RECOVERY SUMMARY

Semi-Volatile Organics in Water

EPA Method 8270

4-Methylphenol

Work Order #	Collector's Sample #	Percent Recovery					
		S1 (PHL)	S2 (2FP)	S3 (NBD5)	S4(2FBP)	S5(246TBP)	TOTAL OUT
88	5-1	33	66	71	67	109	0
90	6-1	27	49	60	59	76	0
91	W-1	25	52	68	55	92	0
92	W-5	51	73	92	76	113	0
93	W-6	22	45	50	43	66	0
94	10-1	32	61	65	64	98	0
95	EB-2	23	44	53	52	52	0
96	FB-2	27	56	64	63	93	0

Surrogates

S1	PHL	Phenol-d5
S2	2FP	2-Fluorophenol
S3	NBD5	Nitrobenzene-d5
S4	2FBP	2-Fluorobiphenyl
S5	246TBP	2,4,6-Tribromophenol

Recovery Limits

10 - 94
21 - 100
35 - 114
43 - 116
10 - 123

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles QC

Page 3 of 5

METHOD BLANK SUMMARY

Semi-Volatile Organics in Water

EPA Method 8270

Lab Blank #	SBLKE10920	SBLKE20920	SBLKE10922
Date Analyzed	9/29/94	10/3/94	10/3/94
Analyte	Concentration mg/L		
Phenol	<0.004	<0.004	<0.004
2-Chlorophenol	<0.008	<0.008	<0.008
1,3-Dichlorobenzene	<0.008	<0.008	<0.008
1,4-Dichlorobenzene	<0.010	<0.010	<0.010
1,2-Dichlorobenzene	<0.009	<0.009	<0.009
Benzyl Alcohol	<0.006	<0.006	<0.006
2-Methylphenol	<0.008	<0.008	<0.008
Hexachloroethane	<0.01	<0.01	<0.01
4-Methylphenol	<0.006	<0.006	<0.006
Nitrobenzene	<0.008	<0.008	<0.008
2-Nitrophenol	<0.009	<0.009	<0.009
Isophorone	<0.01	<0.01	<0.01
2,4-Dimethylphenol	<0.01	<0.01	<0.01
bis(2-Chloroethoxy)Methane	<0.01	<0.01	<0.01
2,4-Dichlorophenol	<0.01	<0.01	<0.01
1,2,4-Trichlorobenzene	<0.01	<0.01	<0.01
Naphthalene	<0.01	<0.01	<0.01
Hexachlorobutadiene	<0.01	<0.01	<0.01
4-Chloro-3-Methylphenol	<0.01	<0.01	<0.01
2-Methylnaphthalene	<0.01	<0.01	<0.01
Hexachlorocyclopentadiene	<0.01	<0.01	<0.01
2,4,6-Trichlorophenol	<0.01	<0.01	<0.01

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Semi-Volatiles QC

Page 4 of 5

METHOD BLANK SUMMARY

Semi-Volatile Organics in Water

EPA Method 8270

Lab Blank #	SBLKE10920	SBLKE20920	SBLKE10922
Date Analyzed	9/29/94	10/3/94	10/3/94
Analyte	Concentration mg/L		
2,4,5-Trichlorophenol	<0.01	<0.01	<0.01
2-Chloronaphthalene	<0.01	<0.01	<0.01
2-Nitroaniline	<0.005	<0.005	<0.005
Dimethylphthalate	<0.01	<0.01	<0.01
Acenaphthylene	<0.009	<0.009	<0.009
4-Nitroaniline	<0.007	<0.007	<0.007
Acenaphthene	<0.01	<0.01	<0.01
2,4-Dinitrophenol	<0.05	<0.05	<0.05
Dibenzofuran	<0.007	<0.007	<0.007
4-Nitrophenol	<0.005	<0.005	<0.005
2,4-Dinitrotoluene	<0.01	<0.01	<0.01
Diethylphthalate	<0.01	<0.01	<0.01
4-Chlorophenyl-phenylether	<0.01	<0.01	<0.01
Fluorene	<0.007	<0.007	<0.007
2-Methyl-4,6-Dinitrophenol	<0.02	<0.02	<0.02
4-Bromophenyl-phenylether	<0.01	<0.01	<0.01
Hexachlorobenzene	<0.01	<0.01	<0.01
Pentachlorophenol	<0.05	<0.05	<0.05
Phenanthrene	<0.005	<0.005	<0.005
Anthracene	<0.005	<0.005	<0.005
Di-n-butylphthalate	<0.01	<0.01	<0.01
Fluoranthene	<0.004	<0.004	<0.004

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Semi-Volatiles QC

Page 5 of 5

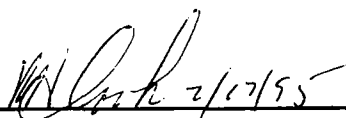
METHOD BLANK SUMMARY

Semi-Volatile Organics in Water

EPA Method 8270

Lab Blank #	SBLKE10920	SBLKE20920	SBLKE10922
Date Analyzed	9/29/94	10/3/94	10/3/94
Analyte	Concentration mg/L		
Pyrene	<0.003	<0.003	<0.003
Butylbenzylphthalate	<0.005	<0.005	<0.005
3,3'-Dichlorobenzidine	<0.002	<0.002	<0.002
Benzo(a)anthracene	<0.003	<0.003	<0.003
Chrysene	<0.005	<0.005	<0.005
bis(2-Ethylhexyl)phthalate	<0.006	<0.006	<0.006
Di-n-octylphthalate	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	<0.008	<0.008	<0.008
Benzo(k)fluoranthene	<0.008	<0.008	<0.008
Benzo(a)pyrene	<0.002	<0.002	<0.002
Indeno(1,2,3-cd)pyrene	<0.001	<0.001	<0.001
Dibenz(a,h)anthracene	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene	<0.001	<0.001	<0.001
2,6-Dinitrotoluene	<0.001	<0.001	<0.001
4-Chloroaniline	<0.005	<0.005	<0.005
3-Nitroaniline	<0.007	<0.007	<0.007

Review / Date:

 2/17/95

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Dissolved Metals ICAP QC
Page 1 of 4

INITIAL CALIBRATION VERIFICATION
QC CHECK SAMPLE REPORT
Dissolved Metals

% Acceptability Limits: 90 - 110

Analyte	Date Analyzed	Expected Result mg/L	Observed Result mg/L	% Recovery
Barium	9/29/94	5	4.917	98
Chromium	9/29/94	5	4.855	97
Silver	9/29/94	0.5	0.4909	98

Method 7470 QC

% Acceptability Limits: 90 - 110

Analyte	Date Analyzed	Expected Result µg/L	Observed Result µg/L	% Recovery
Mercury	10/6/94	2.5	2.57	103

METHOD BLANK SUMMARY
Dissolved Metals

Lab Blank #:	PBlank1
Date Digested:	10/6/94
Date Analyzed:	10/6/94
Analyte	Concentration µg/L
Mercury	<0.2

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Dissolved Metals GFAA QC
Page 2 of 4

INITIAL CALIBRATION VERIFICATION
QC CHECK SAMPLE REPORT
Dissolved Metals

% Acceptability Limits: 90 - 110

Analyte	Date Analyzed	Expected Result $\mu\text{g/L}$	Observed Result $\mu\text{g/L}$	% Recovery
Arsenic	10/1/94	50	49.1	98
	10/4/94	50	50.1	100
Cadmium	9/30/94	5	5.04	101
	10/5/94	5	4.96	99
	10/5/94	5	4.81	96
Lead	10/3/94	50	50.4	101
	10/5/94	50	48.5	97
	10/5/94	50	48.4	97
Selenium	10/4/94	50	50.1	100
	10/5/94	50	50.8	102
	10/7/94	50	50.2	100

Project ID #: 32-02
 Project ID Name: Dolton, IL
 SK Lab Project #: 94-063
 Date Reported: 2/17/95

Metals Method 7470 QC

Page 3 of 4

**MATRIX SPIKE (MS) &
 MATRIX SPIKE DUPLICATE (MSD) SUMMARY
 PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
 Dissolved Metals**

Acceptability Limits %

Work Order #: E94-063-96

RPD: 20

Collector's Sample #: FB-2

% Recovery: 80 - 120

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Mercury	3	0.02	2.37	2.32	94	92	4

ICAP QC

Acceptability Limits %

Work Order #: E94-063-82

RPD: 20

Collector's Sample #: CD-8

% Recovery: 80 - 120

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	0.0607	1.945	1.958	94	95	1
Chromium	0.1	<0.04	0.0881	0.0879	88	88	0
Silver	0.05	<0.03	0.04	0.041	80	82	5

Work Order #: E94-063-96

RPD: 20

Collector's Sample #: FB-2

% Recovery: 80 - 120

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Barium	2	<0.02	1.939	1.931	97	97	1
Chromium	0.1	<0.04	0.0947	0.0937	95	94	2
Silver	0.05	<0.03	0.0491	0.0481	98	96	4

Project ID #: 32-02
Project ID Name: Dolton, IL
SK Lab Project #: 94-063
Date Reported: 2/17/95

Metals GFAA QC

Page 4 of 4

**MATRIX SPIKE (MS) &
MATRIX SPIKE DUPLICATE (MSD) SUMMARY
PERCENT RECOVERY & RELATIVE PERCENT DIFFERENCE (RPD)
Dissolved Metals**

Acceptability Limits %

Work Order #: E94-063-82

RPD: 20

Collector's Sample #: CD-8

% Recovery: 80 - 120

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Arsenic	50	5.3	55.1	56.1	100	102	3
Cadmium	5	0	4.41	4.37	88	87	2
Lead	10	0	10.6	10.7	106	107	2
Selenium	50	0.4	41.4	41.3	82	82	0

Work Order #: E94-063-96

RPD: 20

Collector's Sample #: FB-2

% Recovery: 80 - 120

Analyte	Spike Added µg/L	Sample Conc. µg/L	MS Conc. µg/L	MSD Conc. µg/L	MS % Recovery	MSD % Recovery	RPD %
Arsenic	50	0.5	48.6	50.6	96	100	5
Cadmium	5	0	5.54	5.8	111	116	9
Lead	10	0	8.5	8.4	85	84	2
Selenium	50	0	47.4	48.3	95	97	3

Review / Date:

[Signature]

2/17/95

APPENDIX G-3

CHAIN-OF-CUSTODY/SAMPLE-ANALYSIS REQUEST FORMS

94-063

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project No.: 32-02		Today's Date: 9/20/94		Date Results Requested: STANDARD T-A-T		Analyses Requested															
Sampler's Name: Charlie DeWolf			Phone No.: 307-745-7474		Fax No.: 307-745-7729		VOCs 8240 SVOCs 8270 Metals Dissolved														
Company Name and Address: TriHydro Corporation 410 Grand Avenue Laramie, WY 82070			Company Contact: JACK BEDESSEM CHARLIE DEWOLF																		
Collector's Sample No.		Sample Matrix		Date Sampled/ Time Sampled		No. of Containers															
EF-4 71		WATER		9/20/94 1230		3 VOCs 1 AMBER 1 PLASTIC		X X X													
FF-3 72		WATER		9/20/94 1540		3 VOCs, 1 AMB 1 PLASTIC		X X X													
FF-2 73		WATER		9/20/94 1610		3 VOCs, 1 AMB 1 PLASTIC		X X X													
D-3 74		WATER		9/20/94 1730		3 VOCs, 1 AMBER, 1 PLAS		X X X													
FF-1 75		WATER		9/20/94 1640		3 VOCs 1 AMBER		X X													
CD-7 76		WATER		9/20/94 1550		3 VOCs, 1 AMBER 1 PLAS		X X X													
EB-1 77		WATER		9/20/94 900		3 VOCs 1 AMBER 1 PLAS		X X X													
FB-1 78		WATER		9/20/94 900		3 VOCs 1 AMBER 1 PLAS		X X X													
Remarks: For FF samples, not possible to achieve Zero Headspace due to reaction between acid preservative and calcareous sediment. Metals have been filtered in the field. VOC + SVOC constituent list is same as for soils. Report QA/QC Data as specified in QAPP. Dohm RFI																					
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:		Report PALS See attached sheet for metals									
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:											
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:											
Were samples received in good condition?				Remarks:																	

2A show

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Project No.: 32-02		Today's Date: 9/21/94		Date Results Requested: STANDARD T-A-T		Analyses Requested														
Sampler's Name: Charlie DeWolf			Phone No.: 307-745-7474		Fax No.: 307-745-7729		<div style="display: flex; flex-direction: column; align-items: center;"> <div>VOCs 8240</div> <div>SVOCs 8270</div> <div>METALS (DISSOLVED)</div> </div>													
Company Name and Address: TriHydro Corporation 410 Grand Avenue Laramie, WY 82070			Company Contact: JACK BEDESSEM CHARLIE DEWOLF																	
Collector's Sample No.	Sample Matrix		Date Sampled/ Time Sampled	No. of Containers																
EF-1	WATER	79	9/20/94 1100	3 VOCs	X															
D-1	WATER	80	9/20/94 1440	3 VOCs 1 SVOC	X	X														
D-2	WATER	81	9/20/94 1455	3 VOCs 1 SVOC, 1 METAL	X	X	X													
C.D-8	WATER	82	9/20/94 1405	3 VOCs 1 SVOC, 1 METAL	X	X	X													
W-2	WATER	83	9/20/94 1640	3 VOCs 1 SVOC	X	X														
W-3	WATER	84	9/20/94 1700	3 VOCs 1 SVOC, 1 METAL	X	X	X													
5-3	WATER	85	9/20/94 1745	3 VOCs SVOC	X	X														
W-4	WATER	86	9/20/94 1400	3 VOCs 1 SVOC, 1 METAL	X	X	X													
Remarks: Note - 5-3 SVOC sample - only N 500ml. SAME INSTRUCTIONS AS YESTERDAY																				
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:										
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:										
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:										
Were samples received in good condition?				Remarks:																

CHAIN-OF-CUSTODY RECORD

Page

01

2

Project No.: 32-02		Today's Date: 9/22/94		Date Results Requested: STANDARD T-A-T		Analyses Requested														
Sampler's Name: Charlie DeWolf			Phone No.: 307-745-7474		Fax No.: 307-745-7729		<div style="display: flex; flex-direction: column; align-items: center;"> <div>VOC 8240</div> <div>SVOC 8240</div> <div>METALS DISSOLVED</div> </div>													
Company Name and Address: TriHydro Corporation 410 Grand Avenue Laramie, WY 82070			Company Contact: JACK BEDESSEM CHARLIE DEWOLF																	
Collector's Sample No.	Sample Matrix	Date Sampled/ Time Sampled	No. of Containers																	
✓ 5-1	WATER 88	9/20/94 1000	3 VOA, 1 SVOC	X	X															
✓ 5-2	WATER 89	9/20/94 930	3 VOAs	X																
✓ 6-1	WATER 90	9/21/94 1130	3 VOAs, 1 SVOC, 1 MET	X	X	X														
✓ W-1	WATER 91	9/21/94 1530	3 VOAs 1 SVOC	X	X															
✓ W-5	WATER 91	9/21/94 1550	3 VOAs, 1 SVOC, 1 METAL	X	X	X														
W-6	WATER 92	9/20/94 845	3 VOAs, 1 SVOC	X	X															
10-1	WATER 94	9/21/94 1650	3 VOAs, 1 SVOC METALS	X	X	X														
✓ EB-2	WATER 95	9/21/94 1500	3 VOAs, 1 SVOC 1 METAL	X	X	X														
Remarks: Metals Filtered in field. Some samples (W-1, W-6) have limited amount for SVOCs. For W-6, 2 VOAs only. For W-7, 1 VOA only. Constituents / Detection limits, Same as e-o-c for 9/21 W-5, W-6 only 200-400 mL for METALS																				
Relinquished by: 9-1		Affiliation: TRI HYDRO		Date/Time: 9/22/94 1600		Received by: [Signature]		Affiliation: TECH		Date/Time: 9/22/94 4:00										
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:										
Relinquished by:		Affiliation:		Date/Time:		Received by:		Affiliation:		Date/Time:										
Were samples received in good condition?				Remarks:																



Project No.:		Today's Date:		Date Results Requested:		Analyses Requested																																				
32-02		9/22/94		STANDARD T-A-T																																						
Sampler's Name:			Phone No.:		Fax No.:																																					
Charlie DeWolf			307-745-7474		307-745-7729																																					
Company Name and Address:				Company Contact:																																						
TriHydro Corporation 410 Grand Avenue Laramie, WY 82070				JACK BEDESSEM CHARLIE DEWOLF																																						
Collector's Sample No.	Sample Matrix	Date Sampled/ Time Sampled	No. of Containers	VOC 8240													SVOC 8240													METALS DISSOLVED												
FB-2	WATER (16)	9/21/94 1445	3 VOAs 1 SVOC, 1 MET	X													X													X												
N-7	WATER (4)	9/20/94	1 VOA	X																																						
Remarks:																																										
Relinquished by: [Signature] Affiliation: TRIHYDRO Date/Time: 9/22/94 16:00 Received by: [Signature] Affiliation: [Signature] Date/Time: 9/22/94 4:00																																										
Relinquished by: Affiliation: Date/Time: Received by: Affiliation: Date/Time:																																										
Relinquished by: Affiliation: Date/Time: Received by: Affiliation: Date/Time:																																										
Were samples received in good condition? Remarks:																																										

APPENDIX G-4

GROUND-WATER QUALITY DATA SUMMARY TABLES

Table G-4-1. Water Quality Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Doltan Recycle Center, Doltan, Illinois.

Samples	Acetone	Benzene	Chloro-ethane	Chloro-form	1,1-Di-chloro-ethane	1,2-Di-chloro-ethane	1,1-Di-chloro-ethene	cis-1,2-Di-chloro-ethene	trans-1,2-Dichloro-ethene	trans-1,3-Dichloro-propene	Ethyl-benzene	2-Hex-anone	Methy-lene Chloride	2-Buta-none (MEK)	4-Methyl-2 Pen-tanone
<u>East Field</u>															
EF-1	0.45	0.092	0.98	0.012	1.9	0.22	0.041	2.1	0.016	ND(0.005)	0.56	0.074	0.027	0.8	1.3
EF-3	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	0.0064	ND(0.1)	ND(0.05)
EF-4	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
<u>Former Southeast Field</u>															
FF-1	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
FF-2	1.2	0.043	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	0.017	4.6	0.08	ND(0.005)	0.62	ND(0.05)	ND(0.005)	0.57	2.3
FF-3	ND(0.1)	ND(0.005)	0.024	ND(0.005)	0.065	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
CD-7	ND(0.1)	ND(0.005)	0.026	ND(0.005)	0.059	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
<u>Truck Station 10</u>															
10-1	ND(0.1)	0.026	0.011	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.022	ND(0.005)	ND(0.005)	0.077	ND(0.05)	ND(0.005)	ND(0.1)	0.077
<u>Former Tank Farm D/Truck Station No. 3</u>															
D-1	3.6	0.048	2.1	ND(0.005)	0.78	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.02	0.08	ND(0.05)	0.088	1.5	1.3
D-2	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
D-3	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	0.1
<u>West Tank Farm/Driveway to Facility/Process Building</u>															
W-1	0.72	0.36	1.5	ND(0.005)	1.3	ND(0.005)	0.011	0.32	0.0069	0.09	1.2	0.015	0.43	0.34	0.68
W-2	0.18	0.029	ND(0.01)	ND(0.005)	0.081	ND(0.005)	0.059	6.5	0.09	ND(0.005)	0.0051	ND(0.05)	ND(0.005)	ND(0.1)	0.1
W-3	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
W-4	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	0.035	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	0.0071	ND(0.1)	ND(0.05)
CD-8	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	0.039	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
W-5	2.2	0.11	ND(0.01)	ND(0.005)	0.8	ND(0.005)	ND(0.005)	ND(0.005)	0.024	ND(0.005)	ND(0.005)	ND(0.05)	0.81	3.2	3.8
W-6	ND(0.1)	ND(0.005)	0.017	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.011	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)

Table G-4-1. Water Quality Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples	Acetone	Benzene	Chloro-ethane	Chloro-form	1,1-Di-chloro-ethane	1,2-Di-chloro-ethane	1,1-Di-chloro-ethene	cis-1,2-Di-chloro-ethene	trans-1,2-Dichloro-ethylene	trans-1,3-Dichloro-propene	Ethyl-benzene	2-Hex-anone	Methy-lene Chloride	2-Buta-none (MEK)	4-Methyl-2 Pen-tanone
W-7	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	0.015	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	0.0078	ND(0.1)	ND(0.05)
<u>Truck Station No. 5/North Warehouse Pad</u>															
5-1	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
5-2	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
5-3	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
6-1	ND(0.1)	0.026	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
<u>Equipment Blanks</u>															
EB-1	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
EB-2	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
<u>Field Blanks</u>															
FB-1	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)
FB-2	ND(0.1)	ND(0.005)	ND(0.01)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.05)	ND(0.005)	ND(0.1)	ND(0.05)

Note: Some data were qualified. See Appendix B.

Table G-4-1. Soil Quality Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Styrene	Tetra- chloro- ethene (PERC)	Toluene	1,1,1- Trichloro- ethane	1,1,2- Trichloro- ethane	Trichloro- ethylene	Vinyl Chloride	Xylenes (Total)	All Others
<u>East Field</u>									
EF-1	ND(0.005)	0.78	2.6	5.2	0.170	2.1	0.033	2.6	ND
EF-3	ND(0.005)	ND(0.005)	0.011	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
EF-4	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
<u>Former Southeast Field</u>									
FF-1	ND(0.005)	ND(0.005)	0.083	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
FF-2	ND(0.005)	0.023	12	ND(0.005)	ND(0.005)	2.6	4.3	2.2	ND
FF-3	ND(0.005)	ND(0.005)	0.0063	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
CD-7	ND(0.005)	ND(0.005)	0.01	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
<u>Truck Station 10</u>									
10-1	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	0.41	ND
<u>Former Tank Farm D/Truck Station No. 3</u>									
D-1	ND(0.005)	ND(0.005)	1.1	0.19	ND(0.005)	ND(0.005)	ND(0.01)	0.084	ND
D-2	ND(0.005)	ND(0.005)	0.02	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
D-3	ND(0.005)	ND(0.005)	0.068	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
<u>West Tank Farm/Driveway to Facility/Process Building</u>									
W-1	0.026	0.025	4.6	2	ND(0.005)	ND(0.005)	0.032	2.8	ND
W-2	ND(0.005)	2.5	0.11	ND(0.005)	ND(0.005)	0.59	3.7	0.028	ND
W-3	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
W-4	ND(0.005)	ND(0.005)	0.016	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
CD-8	ND(0.005)	ND(0.005)	0.14	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
W-5	ND(0.005)	ND(0.005)	0.23	0.049	ND(0.005)	ND(0.005)	0.19	ND(0.005)	ND
W-6	ND(0.005)	ND(0.005)	0.0058	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	0.0063	ND

Table G-4-1. Soil Quality Data, Volatile Organic Compounds, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples ¹	Styrene	Tetra- chloro- ethene (PERC)	Toluene	1,1,1- Trichloro- ethane	1,1,2- Trichloro- ethane	Trichloro- ethylene	Vinyl Chloride	Xylenes (Total)	All Others
W-7	ND(0.005)	ND(0.005)	0.06	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
<u>Truck Station No. 5/North Warehouse Pad</u>									
5-1	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
5-2	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
5-3	ND(0.005)	ND(0.005)	0.0051	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
6-1	ND(0.005)	ND(0.005)	0.11	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
EB-1	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
EB-2	ND(0.005)	ND(0.005)	0.059	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
FB-1	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND
FB-2	ND(0.005)	ND(0.005)	0.011	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.01)	ND(0.005)	ND

Table G-4-2. Water Quality Data, Semi-Volatile Organic Compounds (SVOCs), Phase I RFI, Safety-Kleen
Dolton Recycle Center, Dolton, Illinois.

Samples	Phenol (mg/L)	1,2-Dichloro- benzene (mg/L)	2-Methyl- phenol (mg/L)	4-Methyl- phenol (mg/L)	2,4-Dimethyl- phenol (mg/L)	Di-n-butyl- phthalate (mg/L)	Butyl-benzyl phthalate (mg/L)	All Others
<u>East Field</u>								
EF-3	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
EF-4	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
<u>Former Southeast Field</u>								
FF-1	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
FF-2	ND(0.004)	0.016	0.13	0.150	ND(0.01)	ND(0.01)	ND(0.005)	ND
FF-3	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
CD-7	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
<u>Truck Station 10</u>								
10-1	ND(0.004)	ND(0.009)	0.39	0.10	ND(0.01)	ND(0.01)	ND(0.005)	ND
<u>Former Tank Farm D/Truck Station No. 3</u>								
D-1	ND(0.004)	ND(0.009)	0.190	0.100	0.056	ND(0.01)	ND(0.005)	ND
D-2	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
D-3	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
<u>West Tank Farm/Driveway to Facility/Process Building</u>								
W-1	ND(0.004)	ND(0.009)	0.28	0.230	ND(0.01)	0.39	0.084	ND
W-2	ND(0.004)	ND(0.009)	0.013	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
W-3	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
W-4	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
CD-8	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
W-5	0.012	ND(0.009)	0.038	0.058	ND(0.01)	0.110	0.007	ND
W-6	ND(0.013)	ND(0.026)	ND(0.024)	ND(0.018)	ND(0.03)	ND(0.035)	0.015	ND
<u>Truck Station No. 5/North Warehouse Pad</u>								
5-1	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	0.018	ND(0.005)	ND
5-3	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
6-1	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	0.054	ND(0.005)	ND
<u>Equipment Blank</u>								
EB-1	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
EB-2	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	0.028	ND(0.005)	ND
<u>Equipment Blank</u>								
FB-1	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	ND(0.01)	ND(0.005)	ND
FB-2	ND(0.004)	ND(0.009)	ND(0.008)	ND(0.006)	ND(0.01)	0.069	ND(0.005)	ND

Note: No ground-water SVOC data were qualified.

Table G-4-3. Analytical Results, Dissolved Metals, Phase I RFI, Safety-Kleen Dolton Recycle Center, Dolton, Illinois.

Samples	Barium (mg/L)	Cadmium (mg/L)	Mercury (mg/L)	All Others
<u>East Field</u>				
EF-4	0.0284	ND(0.0008)	ND(0.0008)	ND
<u>Former Southeast Field</u>				
FF-2	0.1198	ND(0.0008)	ND(0.0008)	ND
FF-3	0.0307	ND(0.0008)	ND(0.0008)	ND
CD-7	0.0321	ND(0.0008)	ND(0.0008)	ND
<u>Truck Station 10</u>				
10-1	0.0514	0.0018	ND(0.0008)	ND
<u>Former Tank Farm D/Truck Station No. 3</u>				
D-2	0.0215	0.00102	ND(0.0008)	ND
D-3	0.0405	0.0026	0.0047	ND
<u>West Tank Farm/Driveway to Facility/Process Building</u>				
W-3	0.0598	ND(0.0008)	ND(0.0008)	ND
W-4	0.0605	ND(0.0008)	ND(0.0008)	ND
CD-8	0.0607	ND(0.0008)	ND(0.0008)	ND
W-5	0.2239	ND(0.0008)	ND(0.0008)	ND
<u>Truck Station No. 5/North Warehouse Pad</u>				
6-1	0.1384	ND(0.0008)	ND(0.0008)	ND
<u>Equipment Blanks</u>				
EB-1	ND(0.02)	ND(0.0008)	ND(0.0008)	ND
EB-2	ND(0.02)	ND(0.0008)	ND(0.0008)	ND
<u>Field Blanks</u>				
FB-1	ND(0.02)	ND(0.0008)	ND(0.0008)	ND
FB-2	ND(0.02)	ND(0.0008)	ND(0.0008)	ND

Note: No dissolved metals data were qualified.